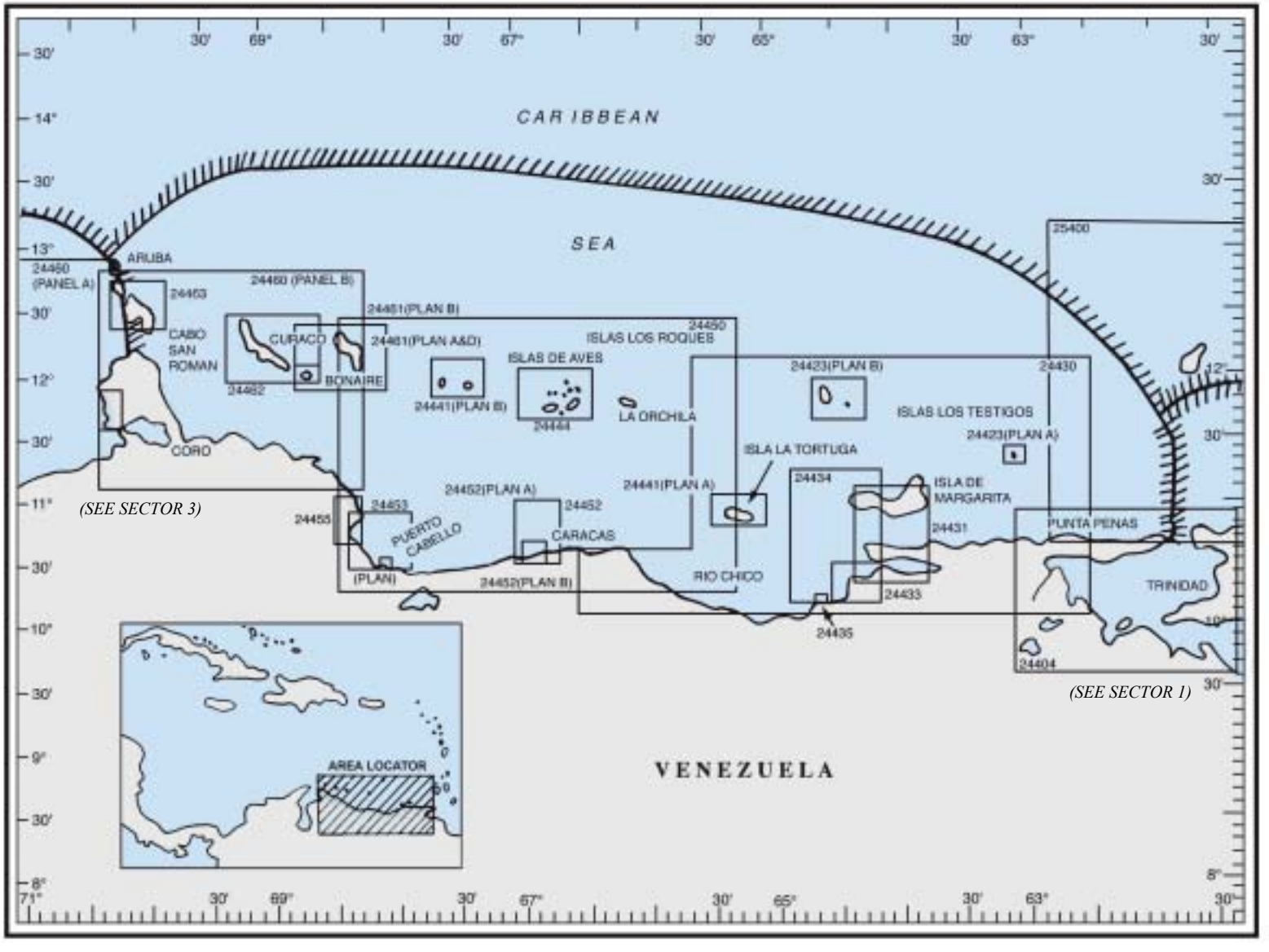
Select "See Sector" to be Hotlinked to that Sector



Additional chart coverage may be found in CATP2, Catalog of Nautical Charts.

SECTOR **2** — CHART INFORMATION

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SECTOR 2

COAST OF VENEZUELA—PUNTA PENAS TO CABO SAN ROMAN, INCLUDING OFF-LYING ISLANDS AND DANGERS

Plan.—This sector describes the N coast of Venezuela from Punta Penas to Cabo San Roman and includes the off-lying islands and dangers. The off-lying islands and dangers are described first and are then followed by a description of the Venezuelan coast. The descriptive sequence is from E to W.

General Remarks

2.1 Vessels navigating along this coast between Punta Penas and Cabo Codera should experience no difficulty. Vessels can pass N of the off-lying islands and dangers, proceeding through Canal Margarita, a fairly deep coastal channel that leads between Isla de Margarita, to the N, and Isla Coche and Isla Cubagua, to the S. This passage is marked by lighted aids for night transit.

Although there are no navigational lights on some of the off-lying dangers, most of these islets and rocks are of sufficient height to give reasonable radar returns. Care should be taken to clear the vicinity of Cumberland Bank, which has shoal heads, and the vicinity of La Sola and Roca del Norte, rocks which are low, steep-to, and detached. Mariners should bear in mind that the general set of the current is to the W.

Puerto La Cruz, with deep-draft oil terminal facilities, is one of the major oil ports of Venezuela. Guanta is one of the more important cargo ports. Puerto Carupano and Puerto Sucre, the port terminal for Cumano, are two smaller ports situated along this section of coast. Oil and cement terminals can be found within Bahia de Pertigalete.

Vessels navigating between Cabo Codera and Cabo San Roman experienced no difficulty in clearing the off-lying islands. Most of the islands are steep-to, prominent, marked by lights, and make excellent radar targets. Care should be taken to navigate with caution when in the vicinity of Los Roques and Islas de Aves, because of the dangerous reefs and low cays in their vicinity.

The coast between Cabo Codera and Golfo Triste is backed by a high mountainous range and is generally bold. The near shore dangers, expect for Farallon Centinela, lie within 2 miles of the coast. Between Golfo Triste and Cabo San Roman, the hills and terrain are lower and quite dispersed, with low land being found in places. Between Punta Tucacas and Punta Zamura there are detached dangers on the coastal bank which extends up to 5 miles offshore in places. The more important ports to be found along this section of coast are LaGuaira and Puerto Cabello. The islands of Aruba and Curacao are important oil refining centers.

Winds—Weather.—The trade winds in the area are almost constant throughout the year. Moving in a clockwise direction around the Arquipelago dos Acores, they produce throughout the year a predominant wind regime that varies between NE and SE, depending on location and season. The tendency is for predominantly NE winds in autumn and winter, and more E winds in the spring and summer months. There is generally an increase in the force of these winds from mid-summer through the winter, and a falling off in velocity in spring and early summer. Wind speeds average 8 to 12 miles per hour in most localities. The strongest breeze of the day usually occurs around 1400, with a speed two to three times that occurring during the predawn hours.

Land and sea breezes have a noticeable bearing on the winds over the island areas, adding force to the E winds of the trades on the windward shores, and decreasing velocities to leeward. Such effects are more important over the larger islands where temperature contrasts between land and water are stronger. In such localities these winds are generally directed offshore in the morning at all locations regardless of average weather situations, while later in the day these offshore winds are obscured or reversed by the stronger onshore velocities of the trades. The morning land breezes are generally unnoticed more than 6 miles at sea. Beyond this limit the trade winds again become the dominant control factor. With the passage of an occasional tropical cyclone, the strong circulatory winds take precedence over any local influences.

Squalls accompanied by thunder and lightning are common throughout the area, but are most frequent in the vicinity of land. These storms usually occur during the summer months and are usually proceeded by sultry weather and light variable winds.

Temperatures are of secondary importance over this region. Air temperatures over coastal areas average about 23.9˚ to 26.7˚C in the winter months and from 26.7˚ to 29.4˚C in the summer.

The dry season prevails from January through April or May and the rainy season covers the rest of the year. Summer is the wettest season and is usually accompanied by frequent heavy showers interspersed with periods of fair weather and sunshine. In general rain occurs at night or during the early morning hours at sea and in the afternoon over the land areas.

During the summer, thunderstorms are numerous with the frequency varying from place to place. The number is greatest over the larger islands and particularly in mountainous sections. Thunderstorm activity is less frequent during the dry season, because of the lower vertical cloud development.

Visibility is generally good throughout this area, often exceeding 30 miles.

Hurricanes are very seldom a threat to the islands and coastal area described in this sector. They generally pass N of these waters and only occasional heavy rain and seas are experienced.

Tides—Currents.—The currents in the offing between Punta Penas and Cabo San Roman generally set W to WNW and attain rates of 1 to 1.5 knots. Occasionally, rates up to 2 knots may be experienced depending upon influences of the wind. There appears to be very little seasonal variation, although tropical storms cause some periodic variation in both set and rate. Rates of less than 1 knot can normally be expected

S of the bank joining Isla de Margarita and Isla de Tortuga. Close to the coast between Puerto La Cruz and Cabo Codera, slight countercurrents have been experienced, but these are normally weak and apparently influenced by the wind and hydrography.

From September through December, in the vicinity of La Guaira, this countercurrent may reach speeds of 2.5 knots at times.

Off-lying Islands and Dangers

2.2 Los Testigos (11˚23'N., 63˚07'W.), a group of several islets and above-water rocks, lie near the Panama Canal-to-Trinidad shipping lanes. The group has no commercial importance except for fishermen and goat herders who inhabit some of the larger islands. Isla Testigo Grande, the largest island, rises to a prominent hill, 246m high, in its NW part. A light is shown from the summit of this island. The channels leading between some of these islands are deep and clear.

The current in the vicinity of Los Testigos often attains a considerable rate setting between W and NW. In August, its rate may be as much as 1.5 knots; in February, it has been found to set NNW at a rate of 2 knots; and in July, it may attain a rate of up to 3 knots.

Anchorage can be taken, in depths of 25 to 29m, mud, with the summit of Isla Testigo Grande bearing 072˚ and the W extremity of Isla Iguana (11˚22'N., 63˚08'W.) bearing 182˚. The above-water rocks fronting the NW point of Isla Testigo Grande must be avoided when approaching this anchorage from the NW.

Approaching from the SE, care should be taken in the passage lying between Isla Testigo Grande and Isla Iguana. Pass midway between the islet close E of Isla Iguana and a small islet off the outer end of a reef, which extends 0.3 mile from the SW side of Isla Testigo Grande. The fairway of this passage has a least depth of 11.3m in mid-channel. Isla Testigo Grande has been reported to be a good radar target up to 22 miles and identifiable, with charted features, by radar at 18 miles. Additional lights are displayed on Isla Testigos Grande and Isla Iguana as shown on the chart.

Caution.—The N islands of Los Testigos are surrounded by relatively deep water. They should be given a wide berth at night due to the constant W current.

Many banks and shoals, with depths of less than 20m, lie up to 19 miles S of Isla Testigo Grande. Depths less than charted may exist; therefore, vessels with drafts exceeding 5.5m should avoid this area.

2.3 Cumberland Bank (11˚12'N., 63˚08'W.), which consists of Daring Shoal on its N part and Green Bank off its E side, lies 3 to 14 miles S and SSE of Los Testigos. Depths of 7.3 to 11m lie over these dangers. The bank is unmarked by any aids to navigation.

Los Frailes (11˚12'N., 63˚44'W.), a group of rocky islets, lie 7 to 9 miles ENE of Cabo de La Isla, the N extremity of Isla de Margarita. These islets have sparse scrub vegetation and are steep-to. The S islet of the group is the largest and rises to an elevation of 91m. Los Frailes has been reported to be radar conspicuous. A light is displayed from the islets.

Anchorage can be taken, in depths of 9 to 14.6m, about 0.2 mile off the SW side of this islet.

Roca del Norte (North Rock) (11˚16'N., 63˚45'W.) lies 3 miles N of Los Frailes. It is small, detached, steep-to, and 3m high.

Isla La Sola, a detached, steep-to rock, 8m high, lies 10.8 miles ENE of Roca del Norte.

2.4 La Blanquilla (11˚52'N., 64˚36'W.), an island, 18m high, appears flat from seaward. The fringing dangers lie within 0.2 mile of the W and S sides of the island and 0.5 mile of the N and E sides. Clumps of trees and rocky outcrops stand on the island. A light is shown from the middle of the S shore.

The best anchorage is off a sandy beach on the W coast of the island, 1.3 miles NE of Punta de La Aguada (11˚51'N., 64˚39'W.). Vessels anchor, in a depth of 14m, about 0.4 mile off the beach, with a house standing among coconut palms 0.5 mile inland bearing 090˚.

A red-roofed house stands at the head of a cove, midway along the S coast of the island.

Anchorage can be taken, in a depth of 26m, about 0.4 mile S of the house. La Blanquilla has been reported to be radar prominent and shows up better when approaching from the W.

Islas Los Hermanos (11˚47'N., 64˚25'W.), a chain of seven barren and rocky islets, lie within 7 miles E and 12 miles SE of the E side of La Blanquilla. They consist of Isla La Orquilla (11˚50'N., 64˚26'W.), Isla Los Morochos, Isla Grueso, Isla Pico (Isla Pando), Isla Fondeadero, and Isla Chiquito. All of the islets are fairly steep-to and have clear, deep passages lying between them.

A shoal patch, with a depth of 14.6m, lies 0.9 mile E of the SE extremity of Isla Grueso. This latter islet is the largest, attaining a height of 198m. Isla Chiquito, the S and lowest, is the smallest islet. Isla Grueso has been reported to be radar prominent.

Isla La Tortuga (10˚56'N., 65˚18'W.) is barren and rises to a height of over 40m. Punta Oriental, the E extremity, and Punta Arenas, the W extremity, are both low, but distinct. The former point may safely be passed at a distance of 0.3 mile. The S side of the island is bold and steep-to, but its W and NW sides are fringed by a sand and coral shoal that extends up to 2 miles offshore. Another detached shoal area, with a depth of 18.3m, lies 3 miles WNW of Punta Arenas. Las Tortuguillas, two small islets, and Cayo Herradura, a small cay, lie near the outer edge of this shoal. Several radio towers stand in various locations on the island. La Tortuga has been reported to be radar conspicuous. Lights are displayed from Punta Orientale and Cayo Herradura.

Anchorage can be taken, in a depth of 14.6m, sand, about 0.5 miles NW of Punta Arenas, with that point bearing 140˚ and the center of the W islet of Las Tortuguillas bearing 007˚.

2.5 Farallon Centinela (10˚49'N., 66˚05'W.), a prominent, light-colored rock, marked by a light with racon, rises to an elevation of 28m. Its NE side is steep, but its SW side slopes gradually to the sea. A rock, which breaks, lies 0.3 mile NW of Farallon Centinela. Farallon Centinela has been reported to be a poor radar target.

La Orchilla (11˚48'N., 66˚08'W.) is generally low and flat, but has seven distinct hills on its N side intersected by low

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valleys. These hills are visible from a distance of 15 miles, and when first sighted from the N or S, appear as separate islands. A hill, 80m high, stands on the W end of the island and Cerro Walker, the summit of the island, rises to a height of 139m about 1 mile E of this hill. Two fairly high hills stand near the NE extremity of the island. A low plain, with mud flats, lies S of the hills. Four lights are shown from the island as best seen on the chart.

Caution.—Due to an established naval base, the area around La Orchilla is restricted and closed to general navigation.

2.6 **Cayo Nordeste** (11˚52'N., 66˚06'W.) is the largest of several cays lying on a bank extending NNE from the NE end of La Orchilla. Some ruined buildings can be seen on the N end of Cayo Nordeste. A shoal patch, with a depth of 17m, lies on the bank, 5 miles NNE of the N extremity of Cayo Nordeste.

Puerto Orchilla (11˚51'N., 66˚06'W.) lies between the N part of Cayo Nordeste and the cays to the W. La Orchilla has been reported to be radar prominent.

Banco Burgano (11˚50'N., 65˚55'W.), a small detached bank with a reported least depth of 23m, lies 10 miles E of La Orchilla.

Islas Los Roques (11˚50'N., 66˚43'W.), a group of many cays on an extensive and dangerous coral reef, lies 22 miles W of La Orchilla. The cays are all low and do not exceed heights of 7m, except El Roque, on the N extremity of the reef. This latter cay rises to a height of 116m at its W end. Scrub covers the cays, and is taller in the E and S parts of the group. Lights are shown from El Roque, about 1 mile ESE of its W extremity; from the SE point of Cayo Grande, the SE island of the group; and from the W extremity (11˚50'N., 66˚57'W.) of the W cay of the group.

Off Islas Los Roques, the current is generally WNW, with an average rate of 1 to 1.5 knots. Close inshore the currents are variable both in direction and rate, especially off the S and W sides of the group. An E countercurrent has been observed N of the group.

The N extremity of El Roque (11˚58'N., 66˚41'W.), bearing 077˚ or more, clears most dangers off the N side of Islas Los Roques. This bearing does not clear a 14m shoal lying in vicinity of (11˚55'N., 66˚56'W.), which is the northwesternmost danger off Islas Los Roques.

A detached shoal patch, with a depth of 10m, has been reported to lie 5.8 miles N of El Roque Light. Vessels passing E of Islas Los Roques should stay in depths of not less than 90m. As it is a lee shore, it is not advisable to approach the reef closer than 2 miles. The S side of the group is steep-to, the 200m curve lying 0.3 to 0.8 mile offshore. Vessels passing along the SW side of the group should also stay in depths of not less than 200m, because of the close proximity of this depth to the fringing dangers.

2.7 **Puerto El Roque** (11˚57'N., 66˚39'W.), an area lying near the N part of Los Roques and formed by a group of cays of which El Roque is the W, provides good anchorage to vessels with local knowledge under ordinary weather conditions. Four channels lead into Puerto El Roque. Vessels can anchor almost anywhere in this sheltered area. The best berth is in the center of the E part, in depths of 16 to 25m, within an area about 0.3 mile in radius. Care should be taken to avoid a coral spit extending 0.2 mile S from a small cay (11˚57'N., 66˚39'W.). El Roque has been reported to be radar conspicuous.

Directions.—To enter Puerto El Roque, a vessel should use Canal del Sur (11˚56'N., 66˚39'W.).

If approaching from the E, pass not less than 1 mile N of Cayo Frances (11˚58'N., 66˚39'W.) and round the prominent W extremity of El Roque at a distance of 0.5 mile. Then steer SE to pass 0.8 mile SW of El Roque and Cayo Namans (11˚56'N., 66˚40'W.).

Isla de Aves (12˚00'N., 67˚24'W.) lies about 28 miles WNW of the W cay of Islas Los Roques. It consists of two groups of low cays lying on dangerous coral reefs, 8.5 miles apart.

Caution.—Great care must be observed when approaching this group of cays, especially from the N, and normally they should be given a wide berth. Depths of 200m or more are to be found about 0.3 to 1.8 miles off all sides. Vessels should observe the 200m curve and keep clear of the cays. Soundings must be taken continuously while transiting this area.

2.8 **Ave de Barlovento** (11˚58'N., 67˚26'W.), the E group, is an area of reefs and shoals nearly circular in shape. It is about 5 miles in diameter, with three cays on its SW part. A light is shown from the S cay. The E and N sides of the group consist of an almost continuous drying reef. Heavy breakers occur along this reef. Several channels on the W side of Ave de Barlovento lead from seaward between the reefs and shoals. They should not be attempted without local knowledge. Ave de Barlovento has been reported to be radar prominent.

Ave de Sotavento (12˚00'N., 67˚40'W.), the W group, is an area of reefs and shoals WNW of Ave de Barlovento. A large cay on its S side is covered with mangroves. An unbroken, drying reef extends from this cay along the E and N sides of the group. A heavy surf breaks along the entire length of this drying reef, and foul ground extends almost 0.5 mile from it. Ave de Sotavento has been reported to be radar prominent. A light with racon is shown from a NW cay.

There is a good clear passage, about 5.5 miles wide and with depths of 200 to 900m, lying between Ave de Sotavento and Ave de Barlovento.

Bonaire

2.9 **Bonaire** (12˚09'N., 68˚17'W.), the E island of the Netherlands Antilles, is rugged, uneven, and moderately high in its N part, but low and sandy in its S part. The trees on some parts of the island grow in clumps and have the appearance of Martello towers when first sighted. Brandaris, a peak rising 2.5 miles SSW of the NW extremity of the island, is 240m high and is often mistaken for a similar high peak at the NW end of Curacao. The coasts of this island are steep-to, with clear water, and free from dangers. The wind on the W coast of Bonaire is predominately E or SE, and there is hardly any swell alongside the piers or at the anchorage. When a hurricane passes close to the island, the wind becomes variable and the piers are then untenable. The currents in the offing and around the points of this island are generally W. On days with little wind, a weak current setting mostly parallel with the coast will be found in Rede Kralendijk, on the W side of the island. A local magnetic anomaly was reported (1947) to have been

observed between 10 and 15 miles N of Bonaire. Bonaire has been reported to be radar conspicuous.

2.10 Lacre Point (12˚01'N., 68˚15'W.), the S extremity of the island, is low and fringed by a sand and coral reef. This point has been reported to be radar prominent.

A stranded wreck lies 1 mile ENE of Lacre Point. From Lacre Point, the E coast of the island extends 12 miles NNE to Boca Spelonk, the NE extremity of the island which is marked by a light. A shallow bay, available only to small craft, indents the coast about 4.5 miles N of Lacre Point.

Ceru Grandi (12˚11'N., 68˚15'W.), a peak 117m high, stands near the SE end of the mountain range located 3.8 miles SW of Boca Spelonk. From Boca Spelonk, the coast extends 0.5 mile N and 12 miles WNW to Malmok, the N extremity of the islands. Several small open bays lie along this section of coast. Three fairly high peaks stand within 2 miles S and SE of the N extremity of the island. Other high peaks stand within 3.3 miles and 4 miles SSE of the same extremity. From Malmok, the W coast of the island extends 5 miles S and 9 miles SE to Kralendijk. Fairly high hills border this section of coast a short distance inland.

Klein Bonaire (12˚09'N., 68˚19'W.), a low, rocky islet, is separated from the coast to the E by Rede Kralendijk, a narrow channel, with a least navigable width of 0.2 mile.

2.11 Kralendijk (12˚09'N., 68˚17'W.) (World Port Index No. 11780), the capital and government seat of Bonaire, is a small town with substantial trade and tourism.

Depths—Limitations.—The port provides alongside berthing for large vessels. The berthing facilities consist of two L-shaped piers and a ro-ro terminal. The North Pier, situated 1 mile SSE of Palu Lechi, is of concrete construction; its W face is 68m long and has a depth of 10.3m alongside. There is a depth of 5.5m along the E side.

The South Pier is situated 0.2 mile S of the North Pier. Its head is 120m long. There is a depth of 12.2m alongside its W side at LW. A dolphin situated close N of South Pier serves as the outer berthing dolphin of a ro-ro berth lying between the North Pier and South Pier. There is a depth alongside of 5.5m and vessels up to 5,000 grt and 91m in length can be accommodated. The North Pier is reserved for passenger vessels and can accommodate vessels up to 30,000 grt and 225m in length. The South Pier can accommodate vessels up to 100,000 grt and 320m in length.

Bonoil Mooring, which consists of two mooring buoys, lies about 3 miles N of Kralendijik.

Aspect.—Landmarks consist of a fort, a memorial column, a radio tower, and a high-roofed house near the shore.

Pilotage.—Pilotage is compulsory, being available 24 hours. Requests for a pilot, giving the vessel's ETA 72 hours, 48 hours, and 24 hours in advance, should be sent through Curacao Coast Radio Station to the vessel's agent, who will relay the information to the terminal management. Pilots board 1 mile SW of the pier.

Pilotage is compulsory for arrival at the Bonoil Mooring; however, vessels may depart without a pilot by prior agreement.

Anchorage.—The coast of Bonaire is so steep-to that the only anchorage is in Rede Kralendijk. The roadstead can be approached either N or S of Klein Bonaire; however, the S approach is more convenient.

Small vessels can anchor in the roadstead close offshore, in a depth of 35m. Large ships must approach the shore with one anchor lowered. The anchorage is situated on a steep bank and considerable skill is required to avoid proceeding in too far, or to risk dragging the anchor into deep water. It is advisable to run a large hawser to one of the old anchors or guns ashore, placed near the fort for that purpose, and haul with care into an anchor berth.

Should a W wind arise, it is advisable to get underway immediately and proceed to deep water. Strong SW winds, which make the anchorage unsafe, may be experienced in September, October, and early November.

It has been reported (1999) that as a result of Hurricane Lenny, depths may differ from those charted in the approaches to Kralendjik. Anchoring without the permission of the harbormaster is prohibited around the whole island between the HW line and the 60m depth contour.

2.12 Zoutsteiger Pier (12˚05'N., 68˚17'W.) is a T-headed pier situated 4 miles S of Kralendijk. The pier is restricted to the loading of salt. Vessels of up to 40,000 dwt can be accommodated alongside in a depth of 13.7m. Pilotage is compulsory. The pilot boards 1.5 miles W of the pier.

Goto Oil Terminal (Bopec Terminal) (12˚13'N., 68˚23'W.) (World Port Index No. 11781), operated by Bonaire Petroleum Corporation, maintains a marine petroleum transfer terminal on the S coast of the NW part of Bonaire, 7.5 miles NW of Kralendijk. The berthing facility consists of two oil piers, each with a platform flanked by dolphins at its head. At No. 1 Pier, the platform is 40m long with a depth of 33.5m alongside; at No. 2 Pier, 0.3 mile E of No. 1 Pier, the platform is 15m long with a depth of 18.3m alongside.

There are no length or beam restrictions at either pier. Tankers up to 516,000 dwt can be accommodated at No. 1 Pier. No anchoring is possible. If the berth is occupied, vessels should remain within VHF range pending instructions.

Pilotage.—Pilotage is compulsory and a 24-hour service is operated. The pilot boards about 1.5 miles SW of the piers. An ETA should be forwarded 72 hours in advance, with a confirmation 48 hours and 24 hours before arrival.

Tankers from Africa, the Mediterranean, or the Middle East should also give their ETA 10 days and 5 days in advance. Vessels should contact the pilot by VHF channel 16 when within 30 miles of the terminal.

Tugs are compulsory. Two tugs are used for vessels up to 150,000 dwt, three for vessels between 150,000 and 320,000 dwt, and four for vessels over 350,000 dwt.

Caution.—Tankers should keep more than 3 miles off the radio station (12˚13.1'N., 68˚19.2'W.) to avoid danger from induction sparks, due to strong radiation from the transmitter.

Curacao

2.13 Curacao (12˚10'N., 68˚58'W.), lying 35 miles off the coast of Venezuela, is the seat of government for the Netherlands Antilles. Four harbors in Curacao provide accommodation for vessels. Willemstad, the main harbor, lies on the S coast in the middle of the island. It consists of Sint

Anna Baai channel and the adjacent inner bay, which is known as Schottegat.

Caracasbaai, an open bay, lies 5 miles E of Willemstad and the harbor of Fuikbaai lies 2 miles farther E. Bullenbaai, another open bay, lies 8 miles W of Willemstad.

Curacao has a large oil refining complex. Shipping operations consist of tanker delivery of crude oil to the refineries, shipment of refined petroleum products, bunkering, general cargo, and passenger trade.

Winds—Weather.—The prevailing winds are ENE or ESE, at an average velocity of 11 to 16 knots. The average temperature is 28˚C. The wet season, which has an annual rain fall of 675mm, lasts from mid-October to mid-February.

Hurricanes are a very rare occurrence.

Tides—Currents.—The tidal range in the ports and bays is about 0.3m. The currents in the vicinity of Curacao generally set to the W, but set strongly around the salient points. Along the SW coast, the currents may attain rates of 2 to 3 knots. Occasionally, the current may set E against the prevailing wind and it creates a short choppy sea that breaks on the shore even when the wind is light. It is important to give the coast a berth of at least 2 miles because of the currents. Local currents found within the bays are described under the principal description of those places.

2.14 From Punt Kanon (Oostpunt), the SE extremity of Curacao, the coast extends 32 miles NW to Noordpunt and is rocky, but generally low. The NE coast of Curacao has not been closely examined. It is exposed to heavy seas and swells and should be given a wide berth.

Sint Joris Baai (12˚08'N., 68˚48'W.), which leads into a lagoon, is the largest of a number of small indentations and inlets along this coast.

Boca Plaja Canoa (12˚11'N., 68˚52'W.), 4.5 miles NW of Sint Joris Baai, is a small indentation. Between Boca Plaja Canoa and Plaja Grande, 14 miles NW, the coast recedes to form Bocht van Hato. The main airport is situated at Hato, 5.3 miles W of Boca Plaja Grande. Boca Ascencion, a small cove, lies 2.5 miles S of Plaja Grande. The village of San Pedro stands 1.5 miles SSE of Boca Ascencion. From Plaja Grande, the coast extends 3 miles NNW and then 5 miles WNW to Noordpunt (12˚24'N., 69˚09'W.), the NW extremity of Curacao. A light is displayed from Noordpunt.

Aspect.—Curacao presents a barren aspect from seaward, with numerous hills standing along its entire length. Sint Christoffelberg, the highest hill, rises to a height of 372m and is the first object sighted in the approach from the N or W. This peak is often mistaken for Brandaris, which rises in the NW part of Bonaire. Sint Barbara, 194m high, is the first object seen in the approach from the E. The island of Curacao has been reported to be radar conspicuous.

Tafelberg, 230m high, rises 1.8 miles SE of Sint Christoffelberg and is also conspicuous. Sint Antonieberg, 172m high, stands 2 miles farther SE of Tafelberg and is prominent.

The NW coast from Noordpunt to Kaap Sint Marie consists of a succession of seldom-used small indentations. The middle part of the SW coast from Bullen Baai to Willemstad is fairly regular and steep-to. From Willemstad SE, the coast is low, backed by hills, and fairly steep-to.

Westpuntbaai (12˚22'N., 69˚09'W.), with the small village of San Pedro at its head, is entered 1.5 miles S of Noordpunt. A light is shown at its head. A large church in this village is visible between some high rocks. Small vessels can anchor off the village, but care is necessary because the shore bank is narrow. This anchorage should be approached with the church bearing 070˚ and with the anchor lowered to 50m. When the anchor takes hold about 0.1 mile offshore, back down and drop a second anchor to prevent swinging too close to the shore. Currents within the bay are negligible.

Temporary anchorage can be taken by small vessels in Knipbaai, about 1.5 miles S of Westpuntbaai.

Boca Santa Cruz (Sint Kruisbaai) (12˚18'N., 69˚09'W.), a small landlocked harbor used only by sailing vessels, is entered about 2 miles S of Knipbaai. It is entered on a course of 079˚ with the anchor lowered to 35m, steering for the S entrance point of the harbor. The anchor will take hold about 0.2 mile offshore.

Daaibooibaai, a small bay located 7 miles SE of Boca Santa Cruz, provides temporary anchorage to small craft.

2.15 Bullenbaai (Curacao Oil Terminal) (12˚11'N., 69˚01'W.) (World Port Index No. 11820) is an open roadstead which is spacious, with great depths in its central part. The largest vessels can enter the port safely. An oil-loading complex is situated on its E side.

Gasoline and benzene produced at the Willemstad refineries are shipped from this terminal. Large oil tanks and the terminal facilities are prominent from the offing. At night, these installations are brightly illuminated.

Winds—Weather.—The high hills backing this bay provide protection from the prevailing winds.

Depths—Limitations.—Bullenbaai has been developed as a transshipment terminal at which tankers up to 530,000 dwt can discharge crude oil for loading and shipment by smaller tankers. There are six berths on the NE side of the bay. Each berth consists of a pier extending about 122m from the shore; at each pier head there is a platform flanked by berthing dolphins and with mooring dolphins nearer the shore. Depths alongside are approximate.

No. 1 VLCC Jetty, with a depth of 21m alongside, is for ships up to 250,000 dwt, with a length of 341m.

No. 2 Jetty, with a depth of 12.8m alongside, is for ships up to 70,000 dwt, with a length of 259m.

No. 3 Jetty, with a depth of 17m alongside, is for ships up to 100,000 dwt, with a length of 274m.

No. 4 Jetty, the largest, is situated 109m offshore and can accommodate ULCCs up to 530,000 dwt. It is 411m long and has a depth of 28.4m alongside.

No. 5 Jetty, with a depth of 19.2m alongside, is for ships up to 100,000 dwt, with a length of 274m.

No. 6 Jetty, with a depth of 28.6m alongside, is for ships up to 530,000 dwt, with a length of 350m.

Pilotage.—Pilotage is compulsory. The pilot embarks 0.5 mile S of Kaap Sint Marie. An ETA should be forwarded 72 hours in advance, and any alteration of more than 6 hours sent immediately; the ETA should be confirmed 24 hours before arrival. Ships are berthed at night as well as by day, port side-to. Tugs are compulsory. Ships must be adequately ballasted to ensure good maneuverability. Ships should contact Fort Nassau

Signal Station on VHF channel 16 when approaching the terminal.

Anchorage.—There is no anchorage in Bullenbaai. Vessels awaiting berths are to remain in the vicinity, within VHF radio range.

St. Michielbaii (12˚09'N., 69˚01'W.), a natural open bay protected from the winds and sea, lies 4.5 miles SE of Bullenbaii. An SPM buoy is moored close to the shore in a depth of 39m. This buoy provides a berth for vessels up to 350,000 dwt, which, because of draft, quarantine, or dangerous cargo restrictions cannot enter port. Vessels are moored stern-to with both anchors down and the bow to seaward.

Willemstad (12˚07'N., 68˚56'W.)

World Port Index No. 11810

2.16 The port of Willemstad comprises Sint Anna Baai and a large inner bay called Schottegat. Together they form one of the best harbors in the West Indies. Administrative control is also maintained over Bullenbaai (paragraph 2.15), Caracasbaai (paragraph 2.17), and Fuikbaai (paragraph 2.18), which are described separately.

Asiento, an irregular peninsula on the N side of the Schottegat, is the site of several large oil refineries. Most of the general cargo berths are situated in Sint Anna Baai, repair and cargo berths on the E side of Schottegat, and tanker berths on the N and W parts of Schottegat.

Tides—Currents.—The tidal rise normally is only 0.3m.

The currents off the entrance usually set to the W, but may be variable at times. The W current may attain rates up to 4 knots. The stronger currents may make it difficult for large vessels to enter because of the narrow entrance. Vessels are required to enter at slow speed, but with sufficient headway to maintain control. The current becomes negligible in Sint Anna Baai.

Depths—Limitations.—Vessels having lengths up to 280m, beams up to 42.6m, and drafts up to 13.7m may transit Sint Anna Baai inbound or outbound. Occasionally, vessels 304m in length have entered the harbor. The mid-channel depths through Sint Anna Baai are 14.9 to 24m. The navigable portion of the entrance to the port is 264m wide and has a minimum depth of 14.9m.

Once past the pontoon bridge, which hinges on the W side of the bay and swings inward, berths line both sides of Sint Anna Baai and are used for general cargo, bunkering, and passenger vessels.

The cruise terminals are primarily situated in Sint Anna Baai. There are four wharves on the E side of the bay. Grotewerf, 217m long, has an alongside depth of 9.4m; Kleinewerf, 140m long, has an alongside depth of 7.3m; Salazarwerf, 110m long, has an alongside depth of 7.3m; and Handelskade has an alongside depth of 5.4m.

Matheywerf is 198m long and has an alongside depth of 7m. Westwerf I and Westwerf II are 146m and 132m long, respectively, and have alongside depths of 7.6m and 11m. Nieuwewerf is 170m long and has an alongside depth of 10m.

Motetwerf, situated close N of the Queen Julianna Bridge, is 189m long and has an alongside depth of 10m. Oranjewerf, 160m long, has an alongside depth of 5.8m. Prins Hendrik Werf is 212m long and has an alongside depth of 10.4m.

The fixed road bridge, about 0.5 mile NNE of the entrance, has a vertical clearance of 55m.

Beyond Sint Anna Baai is an adjacent inner bay known as Schottegat. Schottegat has piers on its N side, used mostly by tankers berthing at the refinery and storage tank facilities. The E and deeper part of the harbor has depths of 10.6 to 18m in its middle and is used generally by ocean-going vessels.

The ten oil berths extend from Pier 1 in Baai van Valentijn (12˚07'N., 68˚56'W.), to the E side of the Asiento Peninsula, 1 mile E; dolphins are situated off some of these piers. Small tankers, which bring oil from Venezuela, use the westernmost piers. An obstruction, marked close E by a lighted buoy, lies 0.1 mile NE of No. 8 Pier at the SE extremity of Asiento Peninsula.

At the E part of Schottegat is Admiral Brionwerven, which has six berths providing a total of 915m of docking space, with a depth of 10.4m alongside. Two special platforms for ro-ro and container ships are situated close S. Vessels with drafts of 7 to 10.1m can be handled. These platforms are also the mooring berths for ferries running between Curacao, Venezuela, Aruba, and Bonaire.

A container terminal, including some ro-ro facilities, is situated close S of Admiral Brionwerven and has a depth of 10.4m alongside.

Aspect.—Sint Anna Baai may be identified from a great distance by Drie Gebroeders, a group of three hills which stand between 1.8 miles and 3 miles NW of its entrance. In addition to two forts at the entrance to Sint Anna Baai, Fort Amsterdam (Nassau) on the S side of Schottegat, a little over 0.8 mile NNE of Waterfort, is readily identified. The fixed bridge spanning Sint Anna Baai is situated about 0.4 mile SW of Fort Amsterdam (Nassau). A prominent chimney painted yellow, with a black top, stands near the coast about 1 mile WNW of Riffort. Another chimney stands close E of it. A conspicuous stadium stands on the W side of the entrance to Sint Anna Baai, and a conspicuous windmill 1.3 miles ENE.

The markers of the range line, bearing 042˚, were reported (1998) to be difficult to identify. More recent reports (2001) report no difficulties identifying this range. The range established on the W side of Sint Anna Baai, in line bearing 023˚30', provides the preferred approach.

Pilotage.—Pilotage is compulsory for all vessels over 50 grt. The pilot boards about 1 mile SW of the piers. An ETA should be forwarded 48 hours and 24 hours prior to arrival through Curacao Coast Radio Station. Fort Nassau, the harbor traffic control center, should be contacted when within range on VHF channels 16 and 12. A 24-hour watch is maintained.

Regulations.—Tugs are compulsory for dry cargo vessels more than 228m in length berthing at Willemstad. Tankers up to 244m in length or more require three tugs; those over 16,000 grt and up to 213m in length require two tugs. Tankers 3,000 to 16,000 grt require 1 tug.

Vessels bound for Willemstad must give advance notice to the harbormaster as to the amount and nature of explosives on board. Vessels with such cargo are not allowed to enter Sint Anna Baai. and are usually sent to Caracasbaai for discharge.

Both anchors should be ready for immediate use. Any defects of engines, steering gear, anchor gear, or any other

defect, which will affect maneuverability, should be reported to the harbormaster prior to entering.

Signals.—The signal station at Fort Nassau (12˚07'N., 68˚56'W.) displays signals governing the movement of vessels within Sint Anna Baai and Schottegat.

The day (shapes) and night (lights) signals are, as follows:

1. Black ball (half mast) or 1 white light—One or more ships may depart.
2. Black ball or 2 red lights—The bridge will be opened for one or more outgoing ships.
3. Black ball and red flag or 1 red light over 1 white light—The bridge is open for one or more outgoing ships.
4. Red flag (signal will be shown until last ship has passed the bridge) or 1 red light (shown until last ship has passed bridge)—The last outgoing ship is entering Sint Anna Baai and following ships must not enter the bay.
5. Red flag and black cone or 1 red light over 2 white lights—The last outgoing ship is passing Nieuwe Wharf and the bridge will remain open for one or more entering ships.
6. Black cone or 2 white lights (vertically disposed)—In the event the bridge is closed, it will be opened for one or more entering ships; in case the bridge is already open for outgoing ships, the last ship is passing the bridge.
7. Green flag and black cone or 1 green light—The last entering ship is passing the buoy and ships that follow are not allowed to enter.
8. Green flag or 1 green light—The last entering ship is passing the buoy and ships that follow are not allowed to enter.
9. Red flag over green flag or 1 red light over 1 green light—The harbor is closed because of a maneuvering ship.
10. Green flag over red flag or 1 green light over 1 red light—The harbor is closed because of unexpected circumstances.
11. Black cylinder or 2 green lights (vertically disposed)—A ship is shifting berth.
12. International answering pennant or Morse code signal "R" by day or Morse code signal "R" at night—Request from a ship for a pilot or a tugboat has been seen or heard.
13. Code flag "N" or a yellow flashing light—A naval ship or ships may enter or leave the harbor.

Note.—The International answering pennant is not shown simultaneously with other signals and is not shown for a period to exceed 1 minute.

The following signals (day shapes and night lights) are displayed from the pontoon bridge at the entrance to Sint Anna Baai:

1. Blue flag or 1 blue light—The bridge will be opened in about 5 minutes.
2. One long blast on siren (tone is muffled from 2200 to 0600)—The bridge will be opened within 1 minute and the land traffic must be stopped.
3. Four long blasts on siren—The bridge either cannot or will not be opened.

The following signals (day shapes and night lights) for the bridge attendant are displayed at the harbor office:

1. Green flag or 1 green light—The bridge attendant must close the bridge.
2. Red flag or 1 red light—The bridge attendant must keep the bridge open.

The following signals (day shapes and night lights) may be displayed by vessels:

1. *A black ball or 1 white light over 1 red light—The ship wants to shift.
2. Two long blasts on whistle or siren—The ship wants a pilot immediately.
3. Three long blasts on whistle or siren—The ship requests the bridge to be opened.
4. Four long blasts on the whistle or siren—The maneuvering of the ship has been stopped for the time being.
5. Ten short blasts on whistle or siren—There is a fire aboard the ship.
6. Morse code signal "K" on whistle or siren—Ship requests permission to block Sint Anna Baai channel, preparatory to mooring or unmooring.
7. Morse code signal "B" on whistle or siren—Ship reports Sint Anna Baai channel now open again.
8. Morse code signal "X" on whistle or siren—A tug is requested.
9. Morse code signal "V" on whistle or siren when navigating in the Sint Anna Baai—Ship is blocking Sint Anna Baai.
10. Morse code signal "V" on whistle or siren when navigating in the Schottegat—Ship is unmaneuverable; other ships should keep clear.

*Either signal is to be followed immediately by a long blast on the whistle or siren. It can only be given when the signals at Fort Nassau indicate that the harbor is clear.

All vessels are prohibited from sounding their whistles or sirens in the harbor area between the hours of 2200 and 0600. The limits of the above harbor area extend from Nieuwe Wharf to the entrance. During these hours the following signals will be displayed:

1. Two red lights (vertical)—Ship requests permission to get underway.
2. Extinguishing of above lights—When leaving, request that the bridge be opened. In the event the ship is entering or shifting, that the harbor is now clear again.

The following storm signals (day shapes or night lights) are shown from the lighthouse at Riffort:

1. Red flag with white background—Storm expected over Curacao.
2. Two red flags with black background or 1 white light between 2 red lights (vertically disposed)—Hurricane expected over Curacao.
3. Green pennant below signal 2—Hurricane exists or is expected in the Caribbean Sea between 60˚ and 65˚W.
4. Black pennant below signal 2—Hurricane exists or is expected in the Caribbean Sea between 65˚ and 70˚W.

Two current meters are attached to the two lights situated 0.1 mile and 0.2 mile W of Waterford Lighthouse, which stands on the E entrance point of Sint Anna Baai. A third meter, visible only from within Sint Anna Baai, is situated on the inner wall of Waterford. The direction and strength of the current is indicated by colored lights displayed vertically from the meters as follows:

1. Red, white, red, green—More than 2 knots, westgoing.
2. White, red, green—1.5 to 2 knots, westgoing.
3. Red, green—1 to 1.5 knots, westgoing.

4. Green—0 to 1 knot, westgoing.
5. Green, orange—0 to 1 knot, eastgoing.

It was reported (1995) that the above current meters are inoperative. It has been reported (2001) that the signals for vessel movement in the harbor are not always in use and that the pilot controls the use of signals.

Anchorage.—Generally, there are no anchorage areas in Willemstad Harbor.

Directions.—Approach the entrance with the lighted beacons in line, bearing 023˚30'. This course leads between the lighted beacons on either side of the entrance. Having cleared these beacons, alter course passing in mid-channel through the pontoon bridge opening. Maintain sufficient headway to overcome any adverse effect of the wind and current. The traffic signals must be strictly observed, because with vessels berthed on both sides of Sint Anna Baai, the fairway is too narrow for large vessels to safely pass each other.

2.17 Caracasbaai (12˚04'N., 68˚52'W.) (World Port Index No. 11800), an open roadstead, lies about 5 miles ESE of Willemstad and has oil berthing facilities for shipping fuel oil and diesel oil in bulk. Passenger and cargo vessels also use the harbor.

Winds—Weather.—The NE trades are constant except during the months of August through October, when they become light and variable. The currents, which are strong at times, set NW across the bay entrance.

Depths—Limitations.—The harbor is dredged to a depth of 14.3m. Vessels with a maximum length of 320m and a draft of 13.7m may be accommodated.

Berthing facilities, on the E side of the bay, consist of Pier No. 2 and Pier No. 3, about 0.2 mile SSE. These T-headed piers have concrete quays and are flanked by dolphins. Vessels berth port side-to. The piers also serve as a passenger terminal. Pier No. 2 has a depth of 15.7m alongside; Pier No. 3 has a depth of 13.7m alongside.

Tugs are based at Willemstad and are provided automatically for berthing only. Two tugs are used for tankers more than 20,000 grt and for passenger liners and cargo vessels more than 30,000 grt.

The 10m curve lies up to 135m off the N and E shores; outside this curve the depths increase sharply.

Aspect.—Tafelberg (Santa Barbara), a 196m hill standing about 1.8 miles E of Caracasbaai, and Fort Beekenburg, on the E side of the bay, are good landmarks from seaward. A former quarantine building standing on the E entrance point is prominent. The large tanks and the terminal facilities are visible for a considerable distance and are brightly illuminated at night.

Spaanse Haven (12˚04'N., 68˚51'W.) is a narrow channel leading into Spaanse Water, an irregular-shaped harbor used solely by yachts.

The obscure entrance is identified by a cluster of oil storage tanks standing on top and fringing the side of the hill that forms the left bank of the entrance.

Pilotage.—Pilotage is compulsory and rendered day and night. The pilot boards 1 mile off Lijhoek (12˚04'N., 68˚52'W.).

Anchorage.—The depths in the bay are too great for anchoring. Vessels awaiting a berth should remain well seaward until ordered to come alongside.

2.18 Fuikbaai (12˚03'N., 68˚50'W.), a narrow lagoon, is used as a phosphate-exporting center. The entrance has a least navigable width of 44.8m. Vessels with a length in excess of 116m or a draft in excess of 7.3m cannot enter. The depth alongside the loading berth is 8.5m. There is a berth, 25m long, available for handling explosives or other cargo; however, only small vessels with a maximum draft of 4.3m can moor alongside. Vessels of greater draft can moor with the help of floats placed between the ship and the quay.

Two lighted beacons in line, bearing 027˚30', lead into the lagoon.

Generally, there is a strong W current in the approach. During some months, usually August through October, strong E currents are encountered. These currents are of great importance to vessels entering the lagoon.

Newport (12˚03'N., 68˚50'W.) is a small port lying on the NE side of the lagoon, just N of Fuikbaai. It has a small phosphate wharf, with an alongside depth of 8.5m. A chimney and a flagstaff are prominent landmarks.

Pilotage.—Pilotage is compulsory. The pilot boards 0.5 mile S of the entrance or in Caracasbaai. The harbor is entered by day only. The vessel must be properly ballasted to ensure safe maneuvering.

The coast between Fuikbaai and Punt Kanon, about 5.5 miles E, is low and bordered by three lagoons. This section of coast is steep-to and depths of over 200m are to be found within 0.5 mile of the shore. To avoid damage to the beaches, vessels are requested to proceed at a moderate speed when within 3 miles of the S coast of Curacao.

Klein Curacao (11˚59'N., 68˚39'W.), lying 6 miles ESE of Punt Kanon, is a low, bare, flat island. It is steep-to, especially on the E side. This island is radar prominent.

Aruba

2.19 Aruba (12˚30'N., 70˚00'W.), on which only sparse vegetation grows, lies with Punta Basora, its SE extremity, located 42 miles W of the N extremity of Curacao. The island is slightly hilly, with a few isolated peaks.

The NE coast of Aruba is rocky and indented by small coves; it is exposed to heavy breakers and should not be closely approached. The SW and W coasts are low. Much of the SW coast is fronted by barrier reefs, with lagoons inside them. Some of the reefs are covered with mangroves. Aruba has been reported to be radar conspicuous.

Winds—Weather.—Although Aruba is generally considered to be outside the hurricane belt of the Caribbean, destructive hurricanes struck the island in 1954 and 1955. The prevailing NE winds carry dense smoke seaward from the oil refineries, and at times the resultant haze may be such that the island is not visible until within 6 miles.

Tides—Currents.—In the vicinity of Aruba, the currents usually set W at a rate of 0.5 to 1 knot, although around the points greater rates may be attained. Off Sint Nicolaas Baai, when the trade winds are strong, the currents may attain rates

of up to 3 knots. When the trade wind is weak or with variable W winds (usually October to December) the currents may set E and attain a rate of up to 2 knots.

Aspect.—Jamanota and Hooiberg, the two highest peaks, rise to elevations of 176 and 167m, respectively, 6 miles and 9.5 miles NW of Punta Basora. These peaks are good landmarks from seaward, but become partially obscured by the dense smoke from the oil refineries at times.

Caution.—Many small fishing vessels may be found anchored off the S coast of Aruba at distances up to 3 miles offshore. Some of the vessels may display no lights.

To avoid the risk of pollution to the beaches on the W and SW coasts, tankers are advised not to anchor offshore between the entrance to Haven Barcadera and the N extremity of the island.

It was reported (1947) that a local magnetic disturbance occurred between Aruba and the mainland.

2.20 Ceru Colorado (12˚25'N., 69˚52'W.), a very dark hill, rises close NW of Punta Basora and has been reported to be radar conspicuous.

From Ceru Colorado, the E side of Aruba extends 4.3 miles NNW and then 4.8 miles NW to Noordkaap. Depths of 18m and less lie within 1 mile S, 0.8 mile E, and 1.5 miles NNE of Punta Basora. Two shoal heads, with depths of 9m and 10m, respectively, lie 0.5 mile ENE and 1 mile NE of Punta Basora.

Two water towers stand 0.5 mile N and a conspicuous tank is situated 3 miles NW of Ceru Colorado.

A range of hills, with peaks between 143 to 176m high, extends 4.3 miles S from a position located 0.5 mile S of Noordkaap.

From Noordkaap, the coast extends 8 miles NW to the N extremity of the island. California, about 0.5 mile ESE, is the NE extremity of Noordwestpunt, a peninsula forming the NW extremity of the island.

From Punta Basora, the SW coast of Aruba extends about 1 mile W to a low sandy point from which a barrier reef, on which there are several low cays, extends about 0.8 mile W to Indiaanskop, a small island, marked by a light. The barrier reef, with a long, narrow island on it, then extends about 0.5 mile NW to the S entrance to Sint Nicolaas Baai.

A channel, 135m wide, has been dredged through the barrier reef about 0.5 mile NW of Indiaanskop; there is a least depth of 12.8m in the fairway of the channel. Lighted beacons lie on each side of the entrance to the channel. A lighted range stands 0.4 mile NNE of Indiaanskop and in line, bearing 087˚, leads through the dredged channel.

On the N side of the lagoon, 0.5 mile NNW of Indiaanskop, there is a pier, with 91m of berths, flanked by dolphins. It is used by dry cargo vessels with drafts up to 9.4m. A turning area, about 180m wide, lies S of the pier and has a least depth of 9.7m.

Sint Nicolaas Baai (12˚26'N., 69˚54'W.)

World Port Index No. 11830

2.21 The port of Sint Nicolaas Baai, which is situated 2.5 miles WNW of Punt Basora, has an oil terminal with a large refinery. It imports and transships crude oil and exports refined products. Protected on its SW side by a long, narrow island, and a reef; the port can be identified, by day, by the large oil tanks and, at night, by the ample lighting. Three conspicuous white chimneys stand on the shore in the SE part of the port. An aluminum-colored chimney, which stands near three yellow tanks, is situated about 0.5 mile ENE of the NW entrance and is very conspicuous.

The controlling depth in the entrance is 13.4m. Maximum arrival draft is 12.2m, while maximum departure draft is 12.5m.

Tides—Currents.—The tidal rise normally is about 0.2m and the maximum rise is about 0.5m. The movement is semidiurnal. The maximum current near the terminal sets W at a rate of 1 knot.

The W currents found just off Sint Nicolaas Baai and the Reef Berths can reach a velocity of 3 knots during the prevailing NE winds. However, during certain times of the year with variable winds, the current may set vessels to the E.

In general, the currents can be unpredictable. Countercurrents also may exist from 0.2 to 2 miles off the coast.

Depths—Limitations.—Vessels berthing at the principal piers enter by the NW entrance and depart by the S entrance.

West Pier, L-shaped, with a depth of 10.1m alongside, is situated on the N side of the bay, 0.4 mile within the NW entrance; there are dolphins up to 0.2 mile W of the W end of the pier head. The pier can handle vessels up to 198m in length with drafts up to 9.8m. There is a boat quay situated close W of the root of West Pier.

Finger Pier No. 1, Finger Pier No. 2, and Finger Pier No. 3 are situated SE of West Pier and have the following limitations:

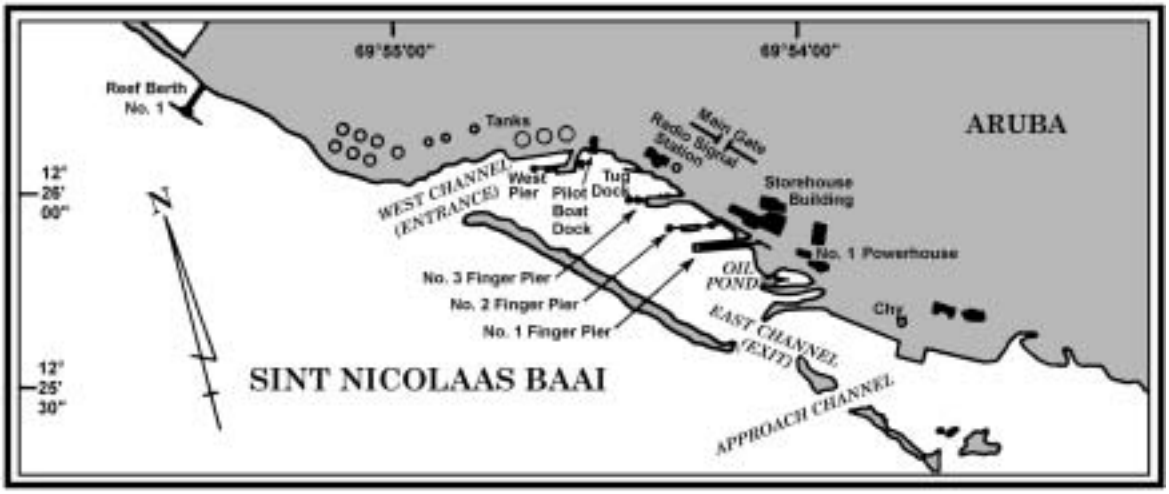
Pier	Max. draft	Max. loa	Max. size
3 (N side)	12.2m	259m	90,000 dwt
3 (S side)	12.5m	274m	90,000 dwt
2	Not used		
1 (N side)	11.9m	227m	50,000 dwt
1 (S side)	11.9m	227m	50,000 dwt

Reef Berth No. 1 and Reef Berth No. 2 project from the shore 0.5 mile and 1 mile, respectively, WNW of the NW entrance to Sint Nicolaas Baai. Each is a T-headed jetty with off-lying dolphins for berthing large tankers. Reef Berth No. 1 can accommodate vessels up to 366m in length and 22.8m draft. Reef Berth No. 2 can accommodate vessels up to 426m in length and 28.9m draft. Vessels berth port side-to. Vessels should be ready to get underway on short notice.

Pilotage.—Pilotage is compulsory for merchant vessels. The pilot boards 1.5 miles WSW of the NW entrance channel for vessels calling at the inner harbor or dry cargo piers. Vessels calling at Reef Berth No. 1 or Reef Berth No. 2 embark the pilot about 2 miles SW of the respective berth. Day and night service is provided. Communication is available via VHF channels 12, 14, and 16.

Regulations.—Local harbor regulations are in force and a copy should be obtained from the facility or the agent.

Anchorage.—Anchorage may be taken on the narrow shorebank outside the harbor, but it is advisable to employ a pilot. Pilots are available for daylight anchoring only. As a rule, vessels should not anchor E of Indiaanskop because the rough



Sint Nicolaas Baai

sea found there makes it difficult for the pilot boat and tugs to go alongside.

Designated anchorage areas, which can best be seen on the area chart, exist off Sint Nicolaas Baai.

Anchorage is prohibited between the coast and an arc with a radius 0.5 mile centered 0.5 mile WNW of the NW entrance point of the channel.

It has been reported that good anchorage can be taken, in a depth of 56m, sand and coral, with the light on the SE side of the N entrance bearing 322° and the signal station bearing 016°.

Vessels over 20,000 dwt should proceed to a position about 10 miles WSW of the harbor entrance and anchor in depths of 36 to 43m.

Caution.—Due to traffic at the refineries, it is recommended that vessels remain at least 2 miles off the coast when transiting this area.

2.22 Commandeurs Baai (12°27'N., 69°57'W.) lies within the lagoon immediately NW of Sint Nicolaas Baai. The entrance to Commandeurs Baai, at the W end of the lagoon, is formed by a narrow channel. This channel has a least depth of 2.7m and leads through the barrier reef. There are depths of 3 to 12m in the navigable part of the lagoon. It is used by local fisherman and only suitable for small craft.

Spaans Lagoen (12°28'N., 69°58'W.), located 2 miles NW of Commandeurs Baai, is marked by a prominent group of tall chimneys standing on its NW entrance point.

Pilotage.—Pilotage is compulsory and always available. The pilot boards about 0.5 mile W of the Reef Berths.

Anchorage.—Anchorage can be taken in a depth of 50m off the barrier reef with the group of chimneys bearing 346°.

Caution.—A submarine cable, which may best be seen on the chart, lies across the W entrance, about 0.2 mile within the entrance. A submarine pipeline, which may best be seen on the chart, lies across the entrance, close E of the cable.

2.23 Haven Barcadera (12°29'N., 70°00'W.) is situated about 2 miles NW of Spaans Lagoen and about 3 miles SE of Oranjestad.

The harbor comprises a deep-water quay, with a dredged approach through the barrier reef; the quay has alongside depths of 8.9 to 10.6m. Vessels up to 185m in length can be accommodated. The harbor entrance is 183m wide with a least depth of 11m in the channel.

The harbor and approach are marked by navigational aids. Lighted range beacons, bearing 093°, lead through the barrier reef into the harbor.

Winds—Weather.—Winds slightly S of E usually prevail and, if strong, affect the maneuvering of vessels in the vicinity of the quay. The wind usually diminishes before dawn and the first hours of daylight are the most favorable for entering. Vessels do enter and depart 24 hours. However, under favorable circumstances the, maneuvering time will be shorter and therefore early morning berthing is desirable.

Tides—Currents.—To the W of the barrier reef, the current sets W at a rate of 1 to 2 knots, but rarely exceeds 3 knots. On occasion, an E set may be experienced at a rate of no more than 2 knots.

Pilotage.—Pilots are available 24 hours and can be obtained from Oranjestad. A tug can be obtained from Oranjestad and its services are strongly recommended.

Paarden Baai (12°31'N., 70°02'W.)

World Port Index No. 11840

2.24 Paarden Baai, a narrow bay protected on its W side by the barrier reef, is the harbor area for Oranjestad, the administrative seat of government for Aruba.

Vessels usually enter through the N channel and depart through the S channel. Both channels have a least width of 0.1 mile. The N channel has a least depth of 11.2m and the S channel has a least depth of 10m. Vessels up to 250m in length can enter, but their draft should not exceed 10m. Minimum

drafts are in force for tankers arriving or sailing in ballast. The use of tugs is advisable for large vessels and vessels in ballast.

Tides—Currents.—Off the port there is a W current. It has a rate of about 1 to 2 knots, but rarely exceeds 3 knots. There are times when there is no current or an E set may be experienced. This set attains a velocity of 2 knots at times. On occasions, when the W set is strong, an E set of 0.5 knot may be experienced within the harbor, but this is rarely noticed because the wind is much stronger and in the opposite direction.

Depths—Limitations.—The entrance channel, the navigable part of the harbor, and the harbor berths have depths of 11m that are maintained by dredging.

The berthing facilities consist of two basins, Westhaven and Oosthaven, separated by a projecting wharf. The main wharf is situated SE of the basins.

Both basins have berths, 167m and 198m long, with least depths of 8.8m alongside. The main wharf, 527m long, extends SE from the SE entrance point of Oosthaven. There is a least depth of 9.5m alongside the SW part of this wharf, and 4.9m alongside the SE part. The container terminal has depths of 11 to 11.2m alongside.

The head of Westhaven comprises a ferry terminal and a ro-ro berth. A container berth is situated NW of the harbor office, which stands at the entrance to Westhaven. A wreck, marked by a yellow buoy, is found in the channel approximately 165m W of the head of the pier containing charted Berth H.

Aspect.—Oranjestad can be identified by a conspicuous water tower with a prominent church standing close NW of it.

Pilotage.—Pilotage is compulsory for vessels over 50 grt and is available at all times. Request for pilot should be made through Curacao Coast Radio Station until within VHF range, giving 48 hours notice of ETA. Oranjestad port radio maintains a 24-hour watch on VHF channels 11, 14, and 16. The pilot boards in position 12°31.3'N, 70°04.1'W. Vessels should approach this channel as near as is prudent and make a lee for the pilot boat.

Anchorage.—Paarden Baai provides anchorage W and S of the main wharf.

Anchorages, suitable even for the deepest draft vessels, are situated outside the protecting reef along the length of the W and SW coast. Because of the sharply shelving nature of the bottom in this area, it is recommended that the services of a pilot be obtained when letting go and weighing anchor.

Caution.—Within the bay, the trend of the channel is almost across the direction of the prevailing wind, so that large vessels and those in ballast must exercise great caution, especially at night, to avoid the reef to leeward. Some difficulty may be experienced in berthing at the main wharf when the trade wind is blowing, and it is then preferable to enter either Westhaven or Oosthaven, head to the wind.

It was reported (1991) that lesser depths than charted exist at all Oranjestad harbor berths.

2.25 **Manshebu** (12°32'N., 70°04'W.), also known as Westpunt, is the W extremity of Aruba. This point has been reported to be radar prominent.

Druif (12°32'N., 70°04'W.), the site of a former bulk oil terminal and refinery, stands on the SW side of the point. This area can be identified by two conspicuous hotels.

From Manshebu, the coast extends 2.8 miles N and then 2.5 miles NNW to the N extremity of Aruba. This section of coast has no barrier reef, but is fronted by a shorebank which extends up to 0.8 mile seaward in places. Depths of less than 20m lie up to 1 mile offshore.

Anchorage.—Vessels awaiting instructions are often requested to anchor W of Noordwest Punt in order to conserve bunkers.

A restricted anchorage area, the limits of which are shown on the chart, extends W from the coast between Manshebu and Basiruti. It is reserved for the use of vessels carrying out repairs, tank cleaning, etc. It is the only anchorage in the vicinity of Aruba where these operations can be effected by VLCCs and ULCCs.

A pilot must be employed for these anchorages, as care is needed not to obstruct the approach to Oranjestad and to avoid an abandoned submarine cable extending W and N from the coast close S of Basiruti.

Caution.—Offshore dangers lying on the coastal bank and positioned relative to Pos Chikitu (12°33.7'N., 70°03.7'W.) are, as follows:

a. 1.5m stony shoal—0.5 mile W.
b. 2.2m shoal—0.6 mile NW.
c. Dangerous wreck—0.8 mile NNW.

In addition, stranded wrecks lie 1 mile and 2.5 miles N of Pos Chikitu; each is marked by a lighted buoy moored close SW. A wreck, with a least depth of 6.1m, lies close SSE of the N stranded wreck.

Coast of Venezuela—Punta Penas to Punta Escarceo

2.26 The coast between **Punta Penas** (10°44'N., 61°51'W.) and Cabo Mala Pascua, 67 miles W, is backed by mountains more than 1,200m high and completely covered by trees. Cabo Mala Pascua is not prominent. Large spurs branch from the central ridge and terminate in bold points, forming deep gorges at the heads of the bays. Generally the coast is bold and rocky, with no off-lying dangers. Rocks fringe this section of coast in places, but usually lie close offshore. Cabo Tres Puntas, located 17.3 miles E of Cabo Mala Pascua and marked by a light, is bold and salient. Two conspicuous peaks stand close together, 6 miles ESE of this cape. The W peak, which is the highest, rises to an elevation of 1,257m.

Ensenada Unare (10°44'N., 62°45'W.), entered 3 miles WSW of Cabo Tres Puntas, is a small roadstead, with depths of less than 5.5m, extending 0.3 mile from both entrance points. Some shelter is provided in the lee of the NE entrance point, which can be identified by a small conical hill surmounting its outer part. The shore of the bay consists of a white, sandy beach, 1.8 miles long, through the middle of which flows a stream. Landing in Ensenada Unare is best effected in the lee of the NE entrance point, but a surf usually makes it difficult.

Puerto Rio Caribe (10°42'N., 63°07'W.), a small town, stands on the shores of Bahia Caribe, about 4 miles W of Punta Frayle (10°43'N., 63°02'W.), a low rocky point.

Anchorage.—Small craft with local knowledge can anchor in this bay, in depths 11 to 13m, in the lee of the E entrance point.

Morro Puerto Santo (10˚43'N., 63˚10'W.), a T-shaped headland, is about 90m high at its outer part and is joined to the mainland by a low sandspit on which the village of Puerto Santo stands. The headland, with Isleta del Puerto Santo, marked by a light, lying close off its W side, appears detached from seaward and provides a good landmark. Monte Puerto Santo, a 1,058m high peak, rises 6 miles S of the headland and is prominent.

Anchorage can be taken W of the isthmus, in depths of 6 to 10m, mud, keeping W of the meridian of the W side of Isleta del Puerto Santo and between 0.2 mile and 0.4 mile off the S shore of the bay.

The coast between Morro del Puerto Santo and Punta Hernan Vasquez is bordered by depths of less than 11m, up to 1 mile offshore.

2.27 **Puerto Carupano** (10˚40'N., 63˚15'W.) (World Port Index No. 12260) consists of a pier protected by a breakwater on its NE side. Only vessels of limited draft can be accommodated.

Vessels approaching from the E or W should keep in depths of 11m or greater until N of the breakwater because of the foul ground lying off the coast E of Punta Hernan Vasquez and because of the many dangerous shoal heads that lie up to 1 mile offshore, W of the breakwater head.

Morro del Puerto Santo and Punta del Tacquien are the most salient and prominent points to be seen from seaward. The radio masts standing 0.8 mile S of the breakwater, the cathedral, and the church with twin spires situated in the town are all prominent marks.

Depths—Limitations.—There are general depths of 7.9 to 9.1m in the approach to the port and a depth of 8.5m over the bar. Vessels intending to moor alongside the pier should not have drafts in excess of 6.1m aft and 5.5m forward in order to avoid striking the bottom in a heavy swell. Warping buoys are moored off both sides of the pier.

The berthing facilities consist of a finger pier, 246m long and 25m wide, protected by a breakwater. On either side of the pier are berths for general cargo, both 123m long. The pier on the W side has a depth of 7.3m alongside and the pier on the E side has a depth of 6.4m alongside.

Pilotage.—Pilotage is compulsory. Pilots are available 24 hours a day and board vessels about 0.5 mile N of the breakwater head.

Anchorage.—Anchorage can be taken in a depth of 8m, mud, about 0.2 mile NNW of the breakwater head with the W spire of the twin-spired church bearing 168˚ and Isleta Jarro, close off Punta Salinas, bearing 263˚. Smaller vessels can anchor closer in.

2.28 The coast between Puerto Carupano and Morro de Chacopata, 33 miles W, is bordered by fringing rocks and dangers which lie within 1.5 miles of the coast. Islas Garrapatas forms the outermost danger.

Morro Blanco (10˚41'N., 63˚20'W.), a rocky promontory covered with dense growth, is located about 4.5 miles W of Puerto Carupano. Punta Padilla, 2 miles W of Morro Blanco, is not conspicuous, but it can be identified by a 46m islet with a round summit and a gray rock formation at its base that lies close off it. Small vessels with local knowledge can anchor in the small bay lying W of Morro Blanco.

Cerro San Jose, 1,030m high, stands 10 miles S of Morro Blanco and is a good landmark when not obscured by clouds.

Punta de Tacquien (10˚41'N., 63˚23'W.), 2.3 miles WNW of Punta Padilla, is salient and rises to a rounded hill covered with vegetation and ending in gray, rocky bluffs. Rocks extend up to 0.2 mile off the point and, being white, are visible from a considerable distance offshore.

Ensenada Garrapatal (10˚39'N., 63˚26'W.), a small bay with shallow depths and a village standing on its E side, lies 1.5 miles SW of Punta de Tacquien.

Islas Garrapatas (10˚41'N., 63˚28'W.), three rocks up to 7m high, lie near the outer end of a foul area that extends about 1.5 miles from the main coast at Morro de Lebranche (10˚41'N., 63˚28'W.). Vessels should not attempt to pass inshore of the rocks as breakers have been reported to occur between them and the coast.

Ensenada La Esmeralda (10˚39'N., 63˚30'W.) is entered 4 miles SW of Islas Garrapatas. Punta Esmeralda, together with Isla Esmeralda close off it, form the E side of the bay. Isletas Cascabel, three islets and some adjacent rocks, foul the E side of the bay.

Anchorage can be taken, in a depth of 11m, mud, about 1 mile N of the village of Saucedo, with the tangent of the NW side of Isla Esmeralda bearing 060˚ and the W islet of the Isletas Cascabel group bearing 103˚. This latter islet is bare and white.

Vessels approaching Ensenada La Esmeralda should give Islas Garrapatas and Isla Esmeralda a berth of at least 0.5 mile.

The coast between Ensenada La Esmeralda and **Punta Guarapotura** (10˚39'N., 63˚42'W.), a bold and rocky headland 13 miles W, consists of red cliffs, 12 to 45m high, broken by occasional sandy beaches. Punta Manzanillo (10˚38'N., 63˚35'W.) and Punta Gorda, 1.5 miles W, are difficult to identify.

Between Punta Guarapotura and Escudo Blanco, 2.5 miles W, there are cliffs up to 18m high, which are white and distinctive in places.

Morro de Chacopata (10˚42'N., 63˚49'W.) stands on the N extremity of a headland from which a light is shown, about 4.5 miles NW of Escudo Blanco. The headland is bold, rocky, 50m high, and reddish in color. The coast between Morro de Chacopata and Escudo Blanco is low and backed by a sandy plain.

2.29 Bahia Chacopata is a bay lying close W and SW of Morro de Chacopata and is shoal. It should only be used by vessels of shallow draft with local knowledge. The islands Isla Caribe and Islote Lobos lie within 3.8 miles WSW of Morro de Chacopata.

Anchorage can be taken, in depths of 9 to 11m, about 0.8 mile SE of Islote Lobos.

Islotes la Tuna, the only off-lying dangers located off the N coast of the Peninsula de Araya, lie about 9.3 miles WSW of Morro de Chacopata. These islets are low and bare, the middle and highest being white and the other two being brown.

The current off the N side of the peninsula generally sets W, with a rate seldom exceeding 0.5 knot.

Punta Tuna (10˚38'N., 63˚57'W.) lies on the N shore of Peninsula de Araya, about 2.5 miles SE of the southernmost islet of Islotes la Tuna. Punta Morros de la Pena, a rocky headland, lies about 6 miles W of Punta Tuna. Between the headland and Punta Gorda, 2.5 miles WSW, the coast is rocky.

Ensenada Salinas, with a sandy beach, is entered between Punta Gorda and Punta Guachin, a low and rocky bluff 5 miles W. Between Ensenada Salinas and Punta Escarceo, 8 miles W, the coast is low, rising gradually toward that point.

Isla de Margarita

2.30 Isla de Margarita (11˚00'N., 64˚00'W.) is the largest of a group of islands, known as Nueva Esparata, lying within an area extending 35 miles from the coast. The other islands of the group are Isla Coche, Isla Cubagua, and Los Frailes.

Isla de Margarita consists of two rocky mountainous sections joined together by a low sandy isthmus, about 2.5 miles wide. When seen from a short distance N or S, the island appears as two separate islands. Picos de Maria Guevara are two hills standing in the middle of the S side of the isthmus. They are prominent when viewed from the N or S.

The E and largest part of Isla de Margarita rises to Cerro San Juan, a peak 988m high, near the E end of Cerros de la Vega de Margarita, a mountain range. This part of the island contains several summits with valleys in between them. La Asuncion, the capital, stands on the NE side of the mountain range.

The W part of Isla de Margarita consists of Cerros del Macanao, another mountain range with four peaks. The highest summit rises to a height of 1,160m. These peaks make excellent landmarks. This part of the island is scantily populated, whereas the E part is heavily populated.

2.31 Cabo de La Isla (Cabo Negro) (11˚10'N., 63˚53'W.), the N extremity of Isla de Margarita, marked by a light, has a small islet lying close NE of it. A shoal, with a least depth of 9.4m, lies about 7.5 miles NW of the cape.

Punta Galera, a high point, forms the N extremity of Cerro Galera and stands about 6.8 miles SW of Cabo de La Isla. Isla Galera, a small islet, lies 1.3 miles NNE of this point.

Bahia de San Juangriego (11˚05'N., 64˚00'W.), a small bay fringed by shoals which extend up to 1 mile offshore, lies between Punta Galera and Punta Maria Libre, 3.3 miles SW. The town of Juangriego stands at the head of the bay. A prominent red church, with twin spires, stands in the town and a prominent white monument is situated 1 mile S of Punta Galera.

Sheltered anchorage can be taken in a depth of 11m in the lee of Cerro Galera with the monument bearing 105˚, distant 1 mile.

Caution.—Care should be taken to avoid a rocky shoal, with a least depth of 3.6m, lying near the middle of Bahia de San Juangriego, 1 mile W of the church.

2.32 Bahia Norte (Ensenada La Guardia) (11˚02'N., 64˚05'W.) indents the coast between Punta Maria Libre and Punta de Tigre (Punta Tunar), marked by a light, 11 miles WNW. Depths shoal from 27m in the entrance to 11m and less near the head.

The village of La Guardia, with a prominent church, stands along the SE shore. The head of the bay is low and swampy.

The coast between Punta de Tigre and Morro del Robledar, 11.5 miles W, is clear and free of off-lying dangers. A large shoal, with depths of 18m and less, lies between Morro del Robledar and Punta Arenas, 4.5 miles S, and extends 10 miles NW from the coast. Bajio Ostial, a detached patch, has a least depth of 8.3m, and lies within this shoal, about 5.5 miles NW of Punta Arenas. A 12.2m shoal patch lies 2 miles WNW of Bajio Ostial.

Vessels are advised to pass to the W of Bajio Ostial due to the shallow patches reported to lie E of Bajio Ostial. Staying 10 miles seaward of Morra del Robledar will clear the above-mentioned dangers.

From Cabo de La Isla, the E coast of Isla de Margarita extends 4 miles S to Cabo Blanco, a defined light gray rocky point. Isletas del Cabo lie within 1.3 miles SE of Cabo de La Isla. Two above-water rocks lie off Cabo Blanco. Puerto Fermin, a small village, stands 0.5 mile SW of Cabo Blanco.

The coast between Cabo Blanco and Punta de la Ballena, 8.5 miles SSE, consists of an unbroken sandy beach. Punta de la Ballena is a rocky headland marked by a light, 70m high, connected to the shore by a sandy pit. A 12.2m shoal patch lies about 0.4 mile SE of Punta de la Ballena.

Cerro del Balantia, 657m high, stands 4.8 miles S of Cabo Blanco.

2.33 Bahia Pampatar (10˚59'N., 63˚50'W.), fringed by a sandy beach, is entered between Punta de la Ballena and Morro de Puerto Moreno, 3.8 miles WSW. Depths within the bay are 5.5m and less within 0.3 mile off the shore in places. Otherwise, the bay is clear of dangers. Isla Blanco, 30m high and prominent, lies 2 miles SSW of Punta de la Ballena. This islet has a white top and a dark base.

A fort, with two towers, stands on the shore and is a good landmark. The cathedral, with a square tower, and the customhouse, a prominent gray building, stand close NW of the fort.

Pampatar (10˚59'N., 63˚48'W.) (World Port Index No. 12240) is situated in the NW part of the bay. The port has a small pier used for landing cargo. This pier was reported (1991) to be dilapidated.

Pilotage.—Pilots embark seaward of a line joining Punta de la Ballena and Morro de Puerto Moreno.

Anchorage.—Good anchorage can be taken, in a depth of 7m, about 1 mile WSW of Punta de la Ballena. Cargo is usually worked into barges at this anchorage.

Puerto Moreno, a shallow bay with a sandy beach at its head, lies between Morro de Puerto Moreno and a point about 2 miles NNE.

Caution.—It was reported (1994) that large concentrations of fishing boats and their gear may be encountered between Punta de la Ballena and Punta Mosquito.

2.34 Bahia La Mar (10˚55'N., 63˚50'W.) indents the coast between Morro de Puerto Moreno and Punta Mosquito, 5 miles SW. The head of the bay is foul up to 0.3 mile offshore, with depths of less than 9m.

Punta Mosquito, marked by a light, is barren and reddish-brown in color. This point appears as an island from a distance because of the low land behind it.

Anchorage can be taken, in a depth of 9m, with the church in the town bearing 000˚ and the S extremity of Morro de Puerto Moreno bearing 061˚.

Porlamar (10˚57'N., 63˚51'W.) (World Port Index No. 12250), the principal town of Isla de Margarita, is situated on the N side of the bay. The church in the town and the two radio masts on the shore are good landmarks.

Two piers, with shallow depths alongside, extend from the shore abreast the town. Cargo is discharged into barges at the anchorage.

2.35 Punta Carnero (10˚53'N., 64˚01'W.) is reported to be a tank farm complex. A finger pier fronts the tank farm and extends 0.5 mile offshore. Small tankers and gas carriers can berth alongside its head.

The tank farm also provides a sea berth for larger tankers, about 0.5 mile SSW of the pier head. This sea berth, which is illuminated at night, consists of mooring and breasting dolphins connected by catwalks. An Anchorage Prohibited Area lies between the tank farm sea berth and Punta Carnero, as best seen on the chart.

From Punta Mosquito, the coast extends 10 miles W to Punta Mangle, a low sandy point. The dense, green mangroves on this latter point help to identify it. Laguna Marites discharges along this section of the coast, about 3 miles W of Punta Mosquito.

Bahia Guamache (10˚53'N., 64˚05'W.) is entered between Punta Mangle and Punta de Piedras, 3 miles NW. It is bordered by shoal ground which extends up to 1 mile off the N shore. The village of Tubores stands close E of Punta de Piedras. Anchorage can be taken about 1 mile S of this village in a depth of 9m clear of the charted ferry routes. A prominent radio mast stands 1.3 miles E of Punta de Piedras.

Caution.—A dangerous wreck is reported to lie in position 10˚53'07"N, 64˚07'06"W.

2.36 Puerto El Guamache (10˚52'N., 64˚04'W.), situated on the S coast of Isla de Margarita, is in an open roadstead, with one berth for general cargo, and an oil terminal. The port has an ambitious development plan over the next several years.

Depths—Limitations.—For vessels bound for the cargo pier, the maximum dimensions are 122m in length and 10.1m draft.

For vessels bound for the oil terminal, the maximum dimensions are a draft of 10.8m and 35,000 dwt. There is one berth, 122m long, with mooring dolphins at either end. The oil terminal consists of an offshore platform, with one breasting dolphin and two mooring dolphins.

Pilotage.—Pilotage is compulsory. Pilot embarks on arrival or at the anchorage. ETA message should be sent 72 hours, 48 hours, and 24 hours in advance through call signs ITT or YVG. Vessels will maintain their engines on standby at the anchorage. The port office is equipped with VHF channel 16.

Anchorage.—Anchorage is available on the W side of Punta Mangle at Bahia Guamache, in depths of 14 to 20m.

2.37 Bahia de Mangle (10˚56'N., 64˚10'W.) is entered between Punta de Piedras and Punta Manzanillo, 6.5 miles WNW. It is bordered by shoals which extend up to 1 mile offshore. Laguna Grande discharges into the N part of this bay. The shores of the bay are low and covered by mangroves. The village of Boca del Rio stands on the N side of the bay, on the W side of the entrance to the lagoon.

Punta Mangle from SW

A rock, with a depth of 2m or less, whose position is approximate, lies near the head of Bahia de Mangle in the approaches to Boca del Rio. A spit, with a least depth of 9.1m, extends about 1.8 miles S from Punta Manzanillo.

From Punta Manzanillo, the coast extends about 12 miles W to Puntas Arenas. The village of El Manglillo stands close E of Punta Negra, 5 miles W of Punta Manzanillo.

Between Punta Manzanillo and Punta Negra, the coast is bordered by a bank, with depths of less than 5.5m, which extends up to 1 mile offshore. Between Punta Negra and Punta Arenas, this bank is about 0.5 mile wide and is steep-to.

A dangerous wreck lies in the middle of Bahia de Mangle.

2.38 Canal de Margarita (10˚50'N., 64˚00'W.) lies between Isla de Margarita and the mainland. It has a least depth of 16.5m in mid-channel. Large vessels can use the fairway leading between Isla de Margarita, on the N side, and Isla Coche and Isla Cubagua, on the S. The passage lying between these latter two islands and the mainland is occasionally used by coasters, but it is not recommended by those without local knowledge. The N fairway is marked by lighted buoys.

Directions.—From a position 2 miles S of Punta Mosquito, steer 268˚ for about 10.5 miles to a position about 0.7 mile S of the lighted buoy moored 0.5 mile SSW of Punta Mangle. From this position, steer 285˚ for 5.3 miles until the light on the N end of the spit extending from the E end of Isla Cubagua bears 180˚. Then steer 270˚ for 2.3 miles until the light on Punta Palanqueta bears 180˚, distant 2 miles. A W course will then lead into deep water clear of all dangers. The above tracks lead through Canal de Margarita and over a least depth of 22m.

2.39 Isla Coche (10˚46'N., 63˚56'W.) is bare and mesa-shaped, with 61m high cliffs. Shoals, with depths of less than 9m, extend SE from Isla Coche to the mainland. A shoal, with depths of less than 1.8m, extends about 1.3 miles N from a low spit that forms the NW extremity of Isla Coche. Islotes La Tuna, Isla Los Lobos, and Isla Caribe stand in the fairway between Isla Coche and the mainland.

Anchorage can be taken outside the reefs which border Isla Coche, but the best berth lies off the SW extremity, in a depth of 12m.

2.40 **Isla Cubagua** (10˚49'N., 64˚11'W.), bare, flat-topped, with 24m high bluffs, lies 8.5 miles W of Isla Coche. Shoals, with depths of less than 9m, extend up to 1.8 miles E from the E extremity and up to 1.8 miles S from the island. Lights are displayed from Punta Brasil and Punta Charagato on the N coast of the island.

Caution.—It is advised to use extreme caution when navigating this area, as many uncharted dangers may exist.

Coast of Venezuela—Punta Escarceo to Puerto Sucre

2.41 The coast of Venezuela from Punta Escarceo extends about 2.8 miles SW to Punta Araya and is low and sandy. There are some scattered huts in the vicinity of the latter point. The SW extremity of Punta Araya is known as Punta Chica.

Bajo de Araya (10˚39'N., 64˚18'W.), a shoal with depths of 1.2 to 5.5m, extends about 2.3 miles WNW from the coast between Punta Escarceo and Punta Araya. The sea breaks over the shallow heads on this shoal bank with strong winds, and it should be given a wide berth. This bank is fairly steep-to and soundings cannot be relied on to give warning of its proximity. The bank is marked on its NW extremity by a lighted buoy.

The stretch of coast between Morro de Chacopata to the E and Punta Araya to the W is known as Peninsula de Araya. This peninsula separates Canal de Margarita to the N from Golfo de Carioco to the S. The peninsula is hilly in its E part, but low in its W part.

Araya (10˚34'N., 64˚17'W.) (World Port Index No. 12230), a town about 4 miles SSE of Punta Araya, is the site of a saltworks. Punta Piedras, 2.8 miles NNW of the town, is bold. A pier, 122m long, extends from the shore abreast the town and has a depth of 7.3m alongside its outer end. A quay, 396m long, is situated at the saltworks and has a depth of 10m alongside.

Pilotage.—Pilotage is compulsory. Pilots board at Puerto Sucre. Berthing is carried out before 0900 due to high winds.

2.42 From Araya to Punta Arenas, 4.5 miles SSE, the coast is fronted by bluffs, 15 to 18m high

Golfo de Cariaco (10˚30'N., 64˚00'W.) is a large, narrow bay entered between Punta Arenas and Punta Carenero, 3 miles SE. The general depths range from 18 to 73m, and except for the fringing shoals along the shores, the bay is clear of off-lying dangers.

The N shore of the gulf is backed by steep mountains and lined with small towns and fishing hamlets.

Laguna Grande del Obispo, an irregular inlet on the N side of the bay, has depths of 25 to 36m in the entrance and 9.1 to 27m in the central basin. Both entrance points are fringed by extending reefs.

The S shore of the gulf is backed by several villages and farmland on a plain, from which rise the foothills of a mountain range. Many streams flow into the gulf along this shore.

2.43 **Puerto Sucre** (10˚28'N., 64˚11'W.) (World Port Index No. 12220), the port terminal for Cumana, is principally a fishing terminal, but is used by oil companies to land cargo and equipment for the oil fields inland.

Castillo San Antonio, a large rectangular building with a white foundation and yellowish-brown upper part, stands on a hill in the E part of Cumana and is conspicuous. A light-colored shed is situated on the head of the pier, a water tower stands at the root of the northernmost pier, and an aluminum tank is situated close E of Morro Colorado. All these landmarks are conspicuous.

Puerto Sucre and Cumana are situated on a short plain through which the Rio Manzanares flows and enters the sea at Punta Carenero, 0.5 mile N of the port. Mountains back the plain 3 to 4 miles S and E of Cumana. Morro Colorado, with prominent red cliffs, rises close inland, 1.3 miles S of the port.

The main pier at Puerto Sucre projects SW from the coast for nearly 0.2 mile. A berth on the NW side of the outer end of the pier is for large vessels, up to 130m in length, and has depths of 7 to 13m alongside. The berth on the SE side is 160m long and has a depth of 6m alongside. Vessels secure heading NE. Maneuvering space abreast the inshore berth is restricted by the shore bank. There is a ro-ro berth at the head of the pier.

Pilotage.—Pilotage is compulsory and is available to assist in anchoring. Pilots usually board incoming vessels in the roadstead and are available 24 hours.

Anchorage.—Anchorage can be taken, in a depth of 27m, about 1 mile SW of the pier head. This anchorage should be approached by heading for Morro Colorado on course of 147˚. The holding ground is good, over a bottom of sand and mud.

Puerto Sucre to Puerto la Cruz

2.44 On the coast between Puerto Sucre and Bahia de Pertigalete, 26 miles SW, there are no ports of importance, although there are several fairly deep bays and inlets. Several fishing villages are situated along this section of coast.

From Puerto Sucre to Punta Piedras, 3.5 miles SW, the coast is low, sandy, and then cliffy in places to Barranca de Mochima, about 6 miles W.

Cerro Escondido (10˚23'N., 64˚17'W.), 183m high and conical, is the best landmark from seaward and stands 3 miles SE of Barranca de Mochima.

Puerto Mochima (10˚24'N., 64˚21'W.), an inlet, is entered W of Barranca de Mochima. It is one of the best harbors on this part of the coast, but it is narrow. The shores of the inlet are steep-to in many places, with the only off-lying dangers being close inshore or in some of the many creeks and coves. The village of Mochima stands at the head of the inlet, but has no commercial importance.

Anchorage can be taken 1.5 miles within the E side of the entrance, but the swinging room is restricted.

Punta Tigrillo, 2.5 miles WSW of the entrance to Puerto Mochima, rises to a dome-shaped hill, 61m high.

Islas Caracas (10˚22'N., 64˚25'W.), a group of four islands, lies in the N part of Ensenada Tigrillo, an irregular bay formed between Punta Tigrillo and Punta Gorda, 5 miles SW. These islands rise up to 183m high, are fairly steep-to, and are intersected by deep passages. Isla Picuda Grande, the W island

of the group, has several rocks lying up to 0.5 mile off its N end and is 122m high.

Bajio Caracas (10˚24'N., 64˚27'W.), a dangerous unmarked shoal with depths of less than 1m, lies 1.5 miles NNE of the N extremity of Isla Caraca del Oeste. A detached 2m patch lies 0.3 mile NNE of the same point.

2.45 Golfo de Santa Fe (10˚18'N., 64˚26'W.) is entered between a point, located 1 mile S of Punta Gorda (10˚20'N., 64˚28'W.), and Punta del Escarpado Rojo, a red-cliffed point 3 miles SSE of Punta Gorda. The bay is generally clear of dangers and has depths of 36 to 73m. An above-water rock lies about 1 mile SSE of the N entrance point.

The N shore is barren except for cactus, whereas the S shore is wooded and cliffy in places. The fishing village of Santa Fe stands on the W bank of a river, about 2 miles E of the S entrance point.

Bahia Cruz (10˚16'N., 64˚27'W.), the bight between Punta del Escarpado Rojo and Punta Cruz, about 1 mile SSW, is clear of dangers up to 0.1 mile offshore, except for a shoal fringing the former point. Good anchorage is provided.

Ensenada Harapos (10˚15'N., 64˚29'W.), the bay between Punta Cruz and Punta Comona, about 4.5 miles W, is generally clear except for a shoal that extends about 0.4 mile offshore, 1.8 miles E of the latter point.

Islas Harapos (10˚16'N., 64˚29'W.), two narrow islets about 12m high, lie 0.8 mile W of Punta Cruz. A 7.5m shoal patch lies 0.3 mile ENE of the E extremity of the easternmost island. The passage leading between this patch and Punta Cruz is about 0.3 mile wide and has a depth of 51m.

Two above-water rocks lie 0.2 mile off the W end of the W island of Islas Harapos. Depths of less than 18m extend up to 0.4 mile W of this island. Foul ground, which joins the two islands, extends 0.2 mile S from an above-water rock lying between them.

Shoal patches, with depths of 0.9m and 2.3m, lie 0.2 mile S and about 0.3 mile WSW, respectively, of the W extremity of the easternmost island.

Bahia de Comona (10˚15'N., 64˚32'W.), deep and clear of dangers, is entered between Punta Comona and Punta Pertigalete, 0.8 mile W. A saddle-backed mountain, 1,030m high, rises 2.5 miles inland of this bay.

Caution.—Dangerous shoals lie 1.3 miles NE and 0.9 mile E of Punta Comona.

2.46 Isla Picuda Chica (10˚18'N., 64˚34'W.), marked by a light, lies in the approach to Bahia de Pertigalete, about 3.5 miles NNW of Punta Pertigalete, and can be identified by its reddish color. Isla Cachicamo lies 1 mile SE of this island and is small in extent. Isla Quirica, 32m high, lies 1 mile SW of Isla Picuda Chica and has a below-water rock located close NW of it.

Isla Chimana Chica, the E island of the Islas Chimana, which extends a little over 6 miles W, stands about 0.3 mile W of Isla Quirica. A dangerous rocky ledge, with some rocks awash, extends 0.5 mile NNE from Chimana Chica.

Isla Chimana Segunda, 114m high in its central part, lies close W of Chimana Chica. A dark rock lies on a ledge extending 0.2 mile W from the W end of this island. The passage lying W of this rock has a least depth of 12.8m over a least width of 0.3 mile; it is seldom used and then only by small vessels. A charted Danger Zone between Isla Chimana Segunda and Isla Chimana Chica should be avoided because of the shoals it encompasses.

Isla Monos (10˚16'N., 64˚33'W.), 191m high, lies close N of Punta Pertigalete. Isla Tiguitigue, a small islet, lies close N of Isla Monos. A detached 9.8m patch lies about 0.8 mile SW of the islet.

Bahia de Pertigalete (10˚15'N., 64˚34'W.) is the site of an oil-loading terminal and a cement-exporting facility. Islas de Plata, three in number, lie in the W part of the bay on a shoal spit which extends about 0.8 mile E from the W shore. Other islets border the W end of the S shore.

2.47 Pamatacual (10˚14'N., 64˚34'W.) (World Port Index No. 12210) has an oil-loading pier which extends 213m NNE from the S shore of the bay.

Depths—Limitations.—The pier is 114m long and has a depth of 10m alongside. An oil pipeline lies parallel to this pier, about 135m to the W. Its seaward end is marked by a buoy. Vessels berth heading NE with both anchors out and the stern secured to mooring buoys. Tankers up to 244m in length and 15.2m draft can be accommodated.

A narrow, buoyed channel lies on the W side of the bay and to the W of the shoal spit with the Islas de Plata located on it. This channel should not be used without local knowledge.

A large pier extends from the shore in the SE part of the bay about 0.5 mile SE of the E end of Islas de Plata. A cement-loading berth is situated N of the pier and has mooring buoys lying off each side. The berth is 158m long and has a depth of 11.9m alongside. It can accommodate vessels up to 150m in length. A T-head pier extends from the northernmost islet of those bordering the W end of the S shore of the bay.

Aspect.—A tower, 46m high, stands on a hill, with an elevation of 457m, about 2.5 miles SSW of Punta Pertigalete.

Pilotage.—A pilot must be embarked at Puerto La Cruz. Vessels are berthed only during daylight hours.

Directions.—A vessel entering the bay should do so on a SW course, keeping midway between the E entrance point and Islas de Plata. When entering from the W, Punta Guanta should be given a berth of at least 0.2 mile, and a vessel should pass about that distance E of the Islas de Plata.

2.48 Guanta (10˚15'N., 64˚35'W.) (World Port Index No. 12200) lies within Bahia Guanta and is the major general cargo facility for the E part of Venezuela. The bay provides a natural sheltered harbor with berthing facilities situated along the S shore.

Winds—Weather.—The winds are generally from the NE, but vessels are cautioned that S winds may be experienced from June to September. Within the harbor, swells do not affect cargo operations.

Tides—Currents.—Currents within the bay are negligible; the tidal rise is about 0.4m.

Depths—Limitations.—The entrance channel leads S between Isla Pitahaya, on the W side, and Round Island (Isla Redonda), on the E side, and is about 180m wide. Lights mark both entrance islands. Reefs and rocks lie on the W side of the entrance channel and extend about 0.2 mile S from Isla Pitahaya.

The E side of the channel between Round Island and Punta Queque, about 0.4 mile S, is fouled by a reef with some islets on it. Reefs encumber the SW part of the bay.

The E berth is 232m long and has a depth of 7.6m alongside; the W berth is 320m long and has a depth of 11.2m alongside; and the middle berth is 322m long and has a depth of 8.2m alongside.

Vessels normally berth port side-to at the W pier and starboard side-to at the E pier. The Customhouse, a large stone building, stands near this wharf and is prominent from seaward.

A small pier is situated on the E side of Bahia Guanta and has a depth of 7.6m alongside.

Pilotage.—Pilotage is compulsory. Pilots embark at Puerto La Cruz, 1 mile offshore, but are available only during daylight hours. An ETA should be sent 48 hours and 24 hours in advance to "Meneven Puerto La Cruz" via VHF. Berthing is carried out during daylight only, but departure can be arranged for any time.

Anchorage.—Anchorage for Guanta is available in Bahia de Pozuelos. Vessels awaiting a pilot or berth may anchor, in depths of 14 to 24m, protected, within the bay. There are no size limitations for the anchorage.

2.49 **Isla Chimana Grande** (10˚18'N., 64˚40'W.) is the largest of a group of rocky islands extending a little over 12 miles W from the W extremity of Isla Cachicamo. Its coasts are precipitous, except at landslides on the N side and at sandy beaches at the heads of coves on the S side. Isla Chimana del Sur lies 0.3 mile S of the E extremity of Isla Chimana Grande. Its SW end is formed by a bold headland, 95m high, which terminates in Punta Baregan, the SW extremity.

Isla Chimana del Oeste (10˚18'N., 64˚41'W.) is joined to the NW end of Isla Chimana Grande by a shallow bank on the middle of which there is an islet.

Morro Pelotas is a dark-colored islet lying 0.1 mile NW of Isla Chimana del Oeste; a light is shown from the summit of the islet.

Cayo Borracho (10˚18'N., 64˚45'W.), located 2.5 miles W of Morro Pelotas, is rocky, precipitous, and almost without vegetation. The island, 376m high, is easily identified from seaward and can be seen at a great distance. A light with a racon is located at the summit of the island.

A W set, with a rate of 0.8 knot, has been reported (1994) to occur off the N end of the island.

Two islets lie on a shallow bank extending nearly 1 mile W from the NW side of Cayo Borracho.

A rock, with a depth of 2m or less, lies about 0.5 mile SW of the SW extremity of El Borracho (10˚16'N., 64˚45'W.).

Los Borrachitos, lying 1 mile SW of El Borracho, are steep-to on their SW sides.

Puerto La Cruz (10˚14'N., 64˚38'W.)

World Port Index No. 12185

2.50 The Puerto La Cruz area consists of the Los Cocos terminals, on the SE shore of Bahia de Pozuelos, and the Guaraguao and El Chaure terminals at Bahia Bergantin. These terminals form the outlet for the second most important petroleum center of Venezuela. The Los Cocos terminals are distribution centers for coastal needs. The Guaraguao and El Chaure terminals are operated by the Mene Grande Oil Company and the Sinclair Oil Company, respectively. The former company acts as agent for several large oil firms and manages the largest terminal which has general cargo berths in addition to berths for large tankers.

Depths—Limitations.—The main entrance channel leading into Bahia de Pozuelos leads S between Morro Pelotas and Cayo Borracho and must be used by all deep-draft vessels. This channel is 2 miles wide, clear of all dangers, and has depths of 18.3 to 54.9m in the fairway. Depths in the roadstead within the bay range from 9.1 to 36.6m.

The entrance fairway into Bahia Bergantin leads E between Isla Burro (10˚15'N., 64˚38'W.) and the berthing facilities to the S. This channel is clear of dangers, except for a detached 8.7m patch on the S side of the fairway, about 0.3 mile SW of Isla Burro. Shoal depths extend about 115m S from Isla Burro, and depths of 9.1 to 11m extend almost 0.5 mile WNW from the W end of the Guaraguao cargo wharf. The reefs within Bahia Bergantin are clearly visible during the day time and are marked by aids. Vessels moor starboard side-to in Bahia Bergantin.

Aspect.—The adjacent islands, which lie in the approaches, are all moderately-high and rocky with sparse vegetation. The radio towers situated 4 miles SW and 3 miles S of the town of Puerto La Cruz are prominent. Cayo Borracho (10˚18'N., 64˚45'W.) and the lighthouse on the summit of Morro Pelotas, 2 miles E, may be easily identified. Within Bahia de Pozuelos, the cranes and control tower at the Guaranguao terminal are prominent as well as the oil tanks standing about 0.8 mile NE of Puerto La Cruz.

Depths—Limitations.—Guaraguao (10˚14'N., 64˚38'W.), situated in the SW part of Bahia Bergantin, consists of oil berths and the cargo berth of Puerto La Cruz.

Berth No. 1 to Berth No. 3, numbered from the W, extend along a wharf that is 823m long. Vessels up to 50,000 dwt and 11.6m draft can moor at these berths.

Berth No. 4 and Berth No. 5, situated close E of the wharf, are formed by a T-headed pier, with mooring dolphins spaced on each side of its head. Vessels up to 120,000 dwt and 14.5m draft can be handled at these berths.

A wharf for general cargo is situated between Punta Guaraguao and the oil loading wharf. It is 207m long and has a depth of 7.6m alongside.

El Chaure (10˚15'N., 64˚37'W.) (World Port Index No. 12190), a terminal in the SE part of the bay, is considered to be Berth No. 6 of Puerto La Cruz. It consists of a wharf, 30m long, with mooring dolphins on each side. Vessels up to 60,000 dwt and 12.2m draft can be handled here. The use of tugs is mandatory.

An pier at Los Cocos (10˚13'N., 64˚39'W.) extends 168m from the shore at the SW end of Puerto La Cruz and serves as an oil terminal. Its outer end is 15m long, with a depth of 8m alongside. Two clusters of dolphins stand parallel to and on either side of the pier head.

A ferry pier, situated close E of the oil pier, extends 120m offshore and has depths up to 3.7m alongside.

Pilotage.—Pilotage is compulsory. An ETA should be given 72 hours, 48 hours, and 24 hours in advance to "Corpoven

Puerto La Cruz" through Puerto La Guaira coast radio station. Pilots board in Bahia de Pozuelos within an anchorage area centered 2.5 miles NE of Morro de Barcelona.

Anchorage.—Anchorage can be taken, in depths of 14 to 22m, within Bahia de Pozuelos, W and WNW of Isla Burro. The anchorage areas may best be seen on the area chart.

Directions.—The channels on each side of Isla Burro can be used, but the normal entrance for vessels with drafts less than 9.1m is through the S channel. The current is negligible, but wind strength in the afternoon and evening should be considered. The NE channel is used by vessels with drafts of 9.1m and greater. Such vessels should enter by steering a SSE course to pass midway between the charted aids.

Puerto La Cruz to Cabo Codera

2.51 The coast from Puerto La Cruz extends 3.2 miles WSW to a small spit located 0.5 mile W of the village of La Lecheria.

Bahia de Barcelona is entered between Morro de Barcelona and Punta Chacopata, 15 miles WSW. Between the low sandy shore of the bay and the foothills inland there are extensive salt flats.

Morro de Barcelona (10˚13'N., 64˚43'W.), located about 4 miles W of Puerto La Cruz, is rocky, 157m high, and heavily covered with cactus. Several radio towers stand near the coast between these points.

The town of Barcelona stands on the SW bank of the Rio Neveri, about 4.5 miles S of Morro de Barcelona.

The coast between Morro de Barcelona and the mouth of the Rio Uchire is bordered by depths of 11m and less which extend between 1 mile and 2.5 miles offshore in places. The W half of this section of coast is bordered by shallow lagoons fronted by narrow strips of sandy beach.

2.52 Puerto Jose (10˚06'N., 64˚51'W.) is situated at the W end of Bahia de Barcelona. It is a terminal for loading refined petroleum products.

Depths—Limitations.—The terminal is approached through a channel, 150m wide, with a minimum depth of 13.6m.

A pier extends 1,440m N from the shore. At its outer end is a berth on either side of the terminal platform. Each berth is 270m long and dredged to a depth of 13.8m alongside. Vessels up to 42,000 dwt, 210m in length, and 10.3m draft can be accommodated.

An SPM buoy, connected to storage tanks on shore by a submarine pipeline, is situated 1.8 miles NNE of the Fairway Lighted Buoy. The least depth of water around the SPM is 22m. Vessels up to 150,000 dwt can be accommodated.

An offshore terminal for loading crude oil lies at 10˚08.6'N 64˚49.6'W. There are two berths, each having a length of 335m, which are able to accommodate vessels of 80,000 to 250,000 dwt, with a maximum length of 350m and draft up to 22.8m. Vessels usually berth starboard side-to at the W berth and port side-to at the E berth.

Aspect.—The Fairway Lighted Buoy is moored 1.2 miles NNE of the terminal.

Pilotage.—Pilotage is compulsory. The pilots and the terminal may be contacted on VHF channels 14 and 16. Pilots prefer docking during daylight hours only. Maximum-sized vessels are only berthed during daylight hours and in wind speeds of less than Force 7.

Pilots board about 1.5 miles N of the Petroterminal Jose platform. An ETA should be sent 7 days, 72 hours, 48 hours, and 24 hours in advance. Contact with the terminal must be established at least 4 hours prior to arrival, confirming the ETA or providing any changes.

Anchorage.—Anchorage may be obtained in the W part of Bahia de Pozuelos. The bay is well-sheltered with good holding ground, mud and sand bottom.

Directions.—A Vessel Traffic System has been established in the navigable waters between Bergantin Bay and Jose Terminal. The service will advise vessels of safety hazards, traffic recommendations, and environmental regulations in effect.

Vessels should approach the terminal from the NE on a bearing of 228˚, leaving the SPM buoy and its outer mooring buoy to starboard.

2.53 Islas Piritu (10˚10'N., 64˚57'W.), two in number, are low and sandy. They lie 13 miles WSW of Morro de Barcelona. The narrow channel lying between the islands has a least depth of 9.1m, but should not be attempted without local knowledge.

A light is shown from the W extremity of the W island. The passage lying between these islands and the coast is about 1.3 miles wide at its narrowest part and is clear in mid-channel, except for an 8.5m shoal which lies about 1.3 miles S of the E extremity of the E island.

Puerto Piritu (10˚04'N., 65˚02'W.), a small fishing port available only to small craft, is situated on the coast about 7.5 miles SW of Islas Piritu.

Cerro Unare (10˚05'N., 65˚15'W.), 579m high, stands near the coast about 12.5 miles W of Puerto Piritu. From any distance, this prominent peak appears as an isolated promontory because of the low coast in the vicinity.

The coast between the Rio Uchire and the Rio Curiepe, about 45 miles NW, is generally low and swampy, but backed by high hills inland. Laguna de Tacarigua, a shallow lagoon, lies about midway along this stretch of coast. The small town of Rio Chico stands a few miles NW of the W end of this lagoon, and the town of Higuerote is situated 12 miles farther NW. A spit, with a depth of 4m at its outer end, extends about 1 mile NE from this latter town. A drying rock stands on this spit about 0.5 mile offshore.

Anchorage can be taken, in a depth of 10m, about 1 mile E of the town. During daylight hours the spit and the rock are clearly visible.

2.54 Puerto Carenero (10˚32'N., 66˚07'W.), situated 4 miles NNW of Higuerote, consists of a small town fronted by a shallow harbor. The berthing facilities are available only to small vessels of shallow draft.

Anchorage can be taken, in a depth of 9m, mud, about 0.4 mile SW of the E entrance point of the harbor.

Cabo Codera (10˚35'N., 66˚03'W.), a prominent steep-to headland, is 264m high and marked by a light.

Farallon Centinela (10˚49'N., 66˚05'W.), a light-colored rock, 28m high, lies about 14 miles N of Cabo Codera. The NE

side of the rock is steep, but its SW side slopes gradually. A rock, on which the sea breaks, lies 0.3 mile NNW of Farallon Centinela. A light, with a racon, is located on this rock.

Cabo Codera to Puerto La Guaira

2.55 Between Cabo Codera and Puerto La Guaira, 52 miles W, the coast is generally bold, rocky, and marked by a few projecting salient points that are prominent. Rocks fringe this section of coast, but most lie close offshore. The outermost danger is a breaking rock which lies 1 mile E of Punta Masparro (10˚39'N., 66˚14'W.).

Ensenada de Corsarios (10˚35'N., 66˚04'W.), a small open bay entered close W of Cabo Codera, provides anchorage in a depth of 12m about 0.4 mile offshore, SW of Punta El Morro, the NW extremity of the cape. The W shore of the bay is fronted by foul ground.

Bahia Chuspa (10˚37'N., 66˚20'W.), an open bay foul around its shores, lies 16.5 miles W of Cabo Codera. The lights in the village of Chuspa, in the SE part of the bay, form a good landmark at night.

Banco Sabana, a detached shoal with a least depth of 6m, lies in the entrance to this bay, about 3.5 miles WNW of the village of Chuspa.

Anchorage can be taken 0.5 mile offshore in the vicinity of Punta Chuspa, the E entrance point to Bahia Chuspa, but the holding ground is only fair.

A light is located on the coast 2 miles W of the village of Caruao.

Punta Naiguata (10˚37'N., 66˚45'W.) is the first prominent point W of Bahia Chuspa. A village stands on high red bluffs within and somewhat E of the point. A coconut plantation situated near the point is prominent.

A light is shown 0.8 mile SW of Punta Naiguata; however, it is of low visibility and almost obscured by shore lights.

Punta Caraballeda (10˚37'N., 66˚51'W.) can be identified by a palm grove and a plantation with two chimneys. The E chimney can be seen from up to 10 miles offshore. Cerro Naiguata, 2,765m high, stands 5.6 miles SSE of the point and is the most prominent peak along this coast.

Puerto La Guaira (10˚37'N., 66˚56'W.)

World Port Index No. 12150

2.56 Puerto La Guaira, an artificial harbor protected by breakwaters, is the principal port of Venezuela and the seaport for Caracas, the capital of the country. The harbor is sheltered by a N breakwater, 0.8 mile long. There are depths of 12 to 19m at the entrance to the harbor. There are a total of 27 berths in the port. The main commercial quays have depths of 5.5 to 11m alongside.

Winds—Weather.—The prevailing winds are the NE trades, which blow with great regularity from February to June. Calms and W winds frequently occur from July to October.

Usually, once or twice a year during the autumn months, Calderetas, which are hot, sharp blasts from the mountains, have sufficient force to be dangerous to vessels not secured in the harbor. These winds are not of long duration.

Although Puerto La Guaira lies S of the hurricane belt, the effects of these tropical storms are occasionally felt in the harbor. During the hurricane season, vessels should be prepared to get underway on short notice.

Tides—Currents.—The diurnal range at springs is about 0.3m. The currents in the offing set to the W and near the coast are weak, seldom exceeding a rate of 0.3 knot. An inshore countercurrent may be experienced during the prevalence of calms and variable winds, especially during the autumn months, and may attain a rate of 2.5 knots.

Heavy and dangerous seas are experienced from October to March and result from strong gales in the Atlantic or Caribbean Sea. They take the form of heavy ground swells, and, in the most severe cases, of long rollers usually coming in groups of three or four at infrequent intervals. These rollers have enormous force and destructive power and can cause great damage. The rollers at times begin to show in depths of 12m in lines about 2 miles long, gradually rising as they approach the coast. It has been reported that at Puerto La Guaira, a heavy ground swell of a dangerous nature is almost always preceded by calms or variable winds. During the rollers, there is a considerable scend in the harbor.

Depths—Limitations.—In the roadstead outside the entrance, there are general depths of 12 to 36m, decreasing to depths of 11 to 14.6m between the breakwater heads. There are depths of 7 to 14.3m over the greater part of the harbor.

The berthing facilities are situated on the S side of the inner part of N breakwater and around the entire perimeter of the harbor. They are numbered in a clockwise direction. Port facilities at La Guaira have been expanded on the S side of the North (extended) Breakwater. Additional berths are provided alongside the Eas Pier and the West Pier, which project into the harbor. All of the berths have dredged depths of 10.7m alongside, with the exception of the berths situated in the E end of the harbor, where the depths may be less because of silting. It was reported that shoal patches, with depths of 9.1m, exist alongside most of those piers. Also, as a result of construction along the S side of the North Breakwater, depths of less than 6.1m exist within 60m of the breakwater.

The old oil pier on the inner side of the West Breakwater is for the exclusive use of naval vessels.

Berths	Depths	Function
North Mole 1	10.9m	Ro-ro terminal.
North Mole 2-5	8.8-10.9m	General cargo. 12-ton cranes.
Grain Berth 6-7	7.9-9.4m	
Raymond Quay 9-12	5.5-8.5m	General cargo.
Vargas Quay 14-19	5.5-8.8m	General cargo. 6-ton cranes.
Passenger Terminal 20-24	8.8-9.7m	
Fishing Dock 25	4.5m	
Navy Quay 26	8.5m	

Within the harbor, there is a turning basin with a diameter of 402m.

Vessels are required to use tugs for berthing and unberthing.

Aspect.—A vessel approaching from the N will first sight the high mountains in the interior in the vicinity of Caracas. Pico Avila, 3.5 miles SSE of Puerto La Guaira, has a distinctive tip at its summit.

A cylindrical building standing close E of Pico Avila is conspicuous from seaward. At night, the obstruction lights on this building are a good mark.

On closer approach, several landmarks are readily identifiable and are positioned from the root of the N breakwater, as follows:

1. A grain elevator close E
2. Three stacks, the E of which is situated 0.3 mile E
3. A long stone building of fortress-type construction situated about 0.3 mile SSE.

There are numerous other prominent buildings in the city. At night, the lights of cars descending down the mountain behind the city can be seen from a considerable distance to seaward.

Pilotage.—Pilotage is compulsory. Pilots can be contacted by VHF channels 12 or 16 and board from a tug about 0.2 mile NW of the entrance. An ETA must be sent 72 hours, 48 hours, and 24 hours before arrival. Changes of 6 hours in ETA should be promptly reported.

Signals.—A signal station is situated at El Vigia (10˚36'N., 66˚56'W.) and communicates with vessels by the International Code of Signals.

Anchorage.—The anchorage area off Puerto La Guaira lies 0.2 mile N of the head of North Mole and extends 2 miles N and E. The area is best seen on the area chart. It is exposed from the W through N to E, but is generally considered safe except in winter, the season of rollers. The anchorages should be used only temporarily.

Vessels carrying explosives should anchor in a restricted area centered about 0.4 mile at the SE corner of the anchorage area.

Caution.—Due to submarine cables, which may best be seen on the chart, anchoring and fishing are prohibited in an area, about 0.5 mile wide, extending 2.5 miles NNE of Punta Mulatos.

Numerous fishing boats may be encountered in the approaches to La Guaira. Many are not lighted and only display their lights upon the approach of another vessel.

Puerto La Guaira to Puerto Cabello

2.57 **Cabo Blanco** (10˚37'N., 66˚59'W.), located 2.5 miles W of Puerto La Guaira, is rocky, bold, and prominent. Several radio towers stand on this cape. The cape has been reported to be a poor radar target.

Punta Calera, located 2 miles W of Cabo Blanco, is flat, relatively low, and can be identified by a cane plantation situated close inshore of it.

Catia La Mar (10˚36'N., 67˚02'W.) (World Port Index No. 12145), a village, is situated 1.3 miles SW of Punta Calera and has a T-head jetty extending from the shore. The head of this jetty has a depth of about 7m alongside. A conspicuous house stands E of the jetty and a flat tableland rises behind the village. A tank farm stands SW of the root of the breakwater and four cement silos stand near the root of the jetty.

Three offshore oil berths, marked by mooring buoys, lie W and SW of the jetty.

Anchorage should be taken, in depths of 12 to 18m, N of the outermost buoy. Vessels wishing to enter Catia La Mar should either anchor or wait N of 10˚36'50"N.

2.58 From Catia La Mar to Puerto La Cruz, 18.5 miles W, the coastal range stands farther inland and is not as high as the terrain to the E. A conspicuous power station stands near the coast about 6.8 miles W of Catia La Mar. This power station is served by an offshore oil terminal marked by five lighted buoys.

Puerto La Cruz (10˚33'N., 67˚21'W.), a small cove with moderate depths, indents the coast only a short distance and has no commercial value. This port should not be confused with the port of the same name which lies 165 miles E of Puerto La Guaira.

Morro Choroni (10˚31'N., 67˚36'W.) is a rounded headland which can readily be distinguished from up to 10 miles offshore. It appears detached from the lower land in the vicinity and rises to an elevation of 76m. La Mesa, a flat-topped peak, rises to an elevation of 2,240m, about 9.3 miles SSE of the point.

Puerto de Ocumare (10˚29'N., 67˚46'W.), a small cove, has a depth of 14.6m in the entrance decreasing to 7.3m about 0.3 mile from its head. Pico Cucharonal, a prominent peak, is 1,850m high and stands 9.8 miles SSW of the port.

Puerto Turiamo (10˚27'N., 67˚51'W.) is entered between Punta Turiamo and Punta Cambiador, about 1.3 miles W, and extends 2 miles S to its head.

Caution.—Due to a naval base, the area around Isla Turiamo is restricted and closed to general navigation. The Restricted Area is best seen on the area chart.

2.59 The coast from Puerto Turiamo to Puerto Cabello is rocky and bluffy to Punta El Penon, and then low and sandy to Punta Brava (10˚30'N., 68˚01'W.). Roca Lavendera (10˚29'N., 67˚54'W.), a dangerous rock, lies 0.2 mile NE of Punta Yapascua.

Five islands lie within 1.3 miles of the coast between Punta El Penon and Punta Brava; they are Isla Larga, Isla Santo Domingo, Isla Alcatraz, Isla Raton, and Isla del Rey. All are of sand and coral formation covered by scrub and grass.

With the exception of Isla Raton, safe channels, with a least depth of 14.6m, exist in the passages between these islands.

Isla Larga (10˚29'N., 67˚57'W.), the E and largest island, lies 1 mile NW of Punta El Penon.

Good anchorage can be taken between this island and the mainland, in depths of 18 to 22m, sand and mud, with the W extremity of the island bearing 339˚, distant 0.5 to 0.8 mile. Charted shoals and reefs encumber the SW approach to the island.

Isla Alcatraz (10˚30'N., 67˚58'W.), the next largest island and the N, lies 1.3 miles NW of Isla Larga. A large part of this island is occupied by a lagoon with its entrance at the NW end. A light and racon mark the SE entrance to the lagoon.

A shoal, with a depth of 13m, lies 1 mile E of Isla Larga. Another 13m shoal lies 0.5 mile S of Isla Alcatraz. A dangerous wreck lies 3 miles NW of Isla Alcatraz.

Caution.—Submarine cables, best seen on the chart, extend E and NE from the coast SE of Isla Raton.

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2.60 Puerto Borburata (10˚29'N., 67˚59'W.) (World Port Index No. 12130), a small cove, lies 1.5 miles E of Punta Brava and is the site of an oil terminal. There are depths of 9.1 to 14.6m in the fairway leading to the terminal over a width of 135m.

The berthing facilities consist of a dolphin berth and a wharf A lighted range in line 140˚ leads in to the harbor. The berth can accommodate tankers up to 180m in length and 9.4m draft. The small wharf can accommodate tankers up to 122m in length and 6.1m draft. It was reported (1987) that the wharf was not in use. Vessels intending to use these facilities should obtain a pilot and clearance at Puerto Cabello. Pilotage is compulsory, but vessels must anchor 1 mile N of Punta Brava to await instructions from the port authority.

Puerto Cabello (10˚29'N., 68˚00'W.)

World Port Index No. 12120

2.61 Puerto Cabello, the third ranking port of importance in Venezuela, provides facilities for the handling of general cargo, containers, bulk cargo, and chemicals. It consists of an artificially-improved lagoon, with the commercial facilities in its outer part and a repair yard in its inner part.

Due to many changes reported in the hydrography of the harbor, local knowledge is essential for entering.

Ample alongside berthing facilities are available for all classes of vessels.

Depths—Limitations.—In the approach to the harbor, the depths shoal gradually from 36m, about 3 miles NW of Punta Brava, to 16.5m off the harbor entrance.

Bajo Larne, with a depth of 5.9m, lies 0.3 mile NE of Isla Goaigoaza W of the harbor entrance.. This shoal breaks when any sea is raised. Discolored water has been reported to occur about 0.3 mile NW of Punta Brava.

A dangerous wreck lies about 2.5 miles NNE of the light shown on Islas Goaigoaza.

The 100m wide entrance channel, which leads W to E, has a dredged depth of 9.1m. There are depths of 7 to 12.8m in the harbor.

Vessels up to 35,000 grt, 230m in length, and 10m draft can enter the port.

A concrete marginal wharf, 1,025m long, provides eight berths for vessels with drafts up to 10m and forms the N side of the outer harbor. A swinging basin, 0.3 mile wide, lies N of the E end of this wharf. There is another basin lying NE of the swinging basin with two piers at its head and a wharf on its W side.

A channel, at the E end of the concrete wharf, leads 0.2 mile S into a basin, which is dredged to a depth of 8.7m. The W side of the channel (E pier) and the N side of the basin (S pier) are quayed, but depths are sufficient only for small vessels.

From the SE corner of the swinging basin, a channel, 137m wide, leads to a dockyard. It is dredged to a depth of 11m. On the SW side of this channel is a bulk cargo wharf, 405m long, which can accommodate vessels with drafts up to 10.6m.

A submarine pipeline for discharging petroleum products extends about 0.3 mile N from the shore near a control station, a little over 0.4 mile SW of the entrance to Puerto Cabello. A buoy, moored close N of the seaward end of the pipeline, marks the position for letting go the port anchor. Tankers up to 40,000 dwt, 198m in length, and 10.4m draft can be handled at this berth. A ro-ro berth is also available.

Aspect.—The first landmark to be sighted will be Fortin Solano, a fort-like structure situated on a high hill, about 1.3 miles SSW of the harbor entrance. This structure can be seen from a distance of 20 miles on a clear day. A light is found close WNW of the fort. On closer approach, the lighthouse on Punta Brava will be seen.

Several oil tanks and a water tower, with a power plant standing in their vicinity, are situated 1.8 miles W of the harbor entrance.

Pilotage.—Pilotage is compulsory for merchant vessels and highly recommended for all other vessels. Pilots board 0.5 to 0.8 mile off Punta Bravo Light. Pilots can be contacted by VHF channels 8, 10, or 16.

Vessels waiting for a pilot should do so in the area lying between 10˚31'N and the coast, and between 68˚00'W and 68˚02'W, excluding the entrance channel. Vessels may either anchor or remain underway, but stopped. Pilots will board in the order of arrival.

Anchorage.—The bay lying W of Puerto Cabello, between Punta Brava and Bajo Larne, provides anchorage, in depths of 11 to 20m, sand and mud. Vessels should anchor clear of the entrance channel. Anchorage areas designated Alpha, Bravo, and Charlie are best seen on the area chart. A quarantine anchorage is located close E of Isla Goaigoaza.

Puerto Cabello to Puerto Chichiriviche

2.62 Golfo Triste (10˚40'N., 68˚13'W.), a large open body of water with fairly regular depths, lies between Punta Brava and Punta Tucacas, 25 miles NNW. Several off-lying cays and shoals in the NW part of the gulf lie within 5 miles offshore and can be considered dangers. Between Cayo del Sur and Cayo del Medio and close NE of the latter, are depths of less than 5.5m. Depths of 3.7 to 7.3m lie up to 0.5 mile NNE of Cayo del Norte. Except for these cays and the shoal depths in the vicinity of Punta Tucacas, the gulf is free of dangers. The bottom is sand and mud, and shoals gradually and uniformly toward the shore.

The prevailing currents set W and are forced out to the N by the cays and the coast in the vicinity of Punta Tucacas. An E current with eddies has been observed in the S part of the gulf.

The coastal range descends to a plain W of El Palito and the low coast is fronted by a sandy beach on which the surf is almost continuous. Several rivers discharge discolored water into the gulf, which may extend up to 3 miles offshore and give the appearance of shoals.

2.63 El Palito (10˚30'N., 68˚07'W.) (World Port Index No. 12115), an oil terminal, stands on Punta Chavez, about 6.8 miles W of Punta Brava.

Tides—Currents.—Heavy swells may be encountered and vessels should be prepared to get underway at a moments notice. During January through March, heavy sea and swell conditions may delay berthing. The currents usually set W at a rate of 1 knot in the vicinity of the pier. The normal range of the tide is about 0.3m.

Puerto Cabello

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Depths—Limitations—The terminal consists of two piers extending from Punta Chavez. A total of 825m of pier space is available at the E pier; there is 1,451m of pier space available at the W pier. A total of four berths are available. The E pier contains Berth No. 1 and Berth No. 2. The W pier contains Berth No. 3 and Berth No. 4.

Berth No. 1 can accomodate vessels of 228m length, 12.2m draft, and 65,000 tons dispalcement.

Berth No. 2 can accomodate vessels of 210m length, 11.6m draft, and 65,000 tons displacement.

Berth No. 3 and Berth No. 4 can accomodate vessels of 250m length, 14.6m draft, and 110,000 tons displacement.

A refinery stands close S of Punta Chavez.

Aspect.—Lights are shown from towers, 24m high, standing on the NW and SE sides of the E pier head.

Three chimneys, each showing a flashing high intensity light, are situated at the refinery. A prominent flare is also situated at the refinery. When approaching the terminal at night, the navigational aids are often obscured by numerous background lights.

The chimney lights and the flare are reported to be visible from about 20 miles to seaward. A group of five tanks stands about 1.2 miles SSE of the E pier head. They are reported to be painted white and visible from 20 miles seaward on a clear day.

Three conspicuous chimneys, painted in red and white bands, stand 2 miles W of the terminal near Punta Moron.

Pilotage.—Pilotage is compulsory. Pilots board at the anchorage and are available any time, day or night. An ETA should be sent by radio to Puerto Cabello at least 72 hours prior to arrival. The message should include the estimated time to discharge ballast. This ETA should also be confirmed 24 hours prior to arrival. Vessels should call the terminal on VHF channel 6 or 16 at least 4 hours prior to actual arrival. Vessels are berthed from sunrise to sunset, but may depart at any time.

Anchorage.—Anchorage can be obtained 0.5 to 1 mile N or W of the E pier head.

2.64 The **Rio Aroa** (10˚41'N., 68˚18'W.) is located 11.8 miles NW of the disused Moron Terminal. This river is available only to shallow-draft vessels which transport copper ore from a mine inland to coastal vessels anchored off the mouth.

Tucacas (10˚48'N., 68˚19'W.) stands on the W entrance point of an extensive shallow lagoon on the NW side of the Golfo Triste. It was once an important shipping center for copper ore, but due to silting only a depth of 1m exists alongside the town wharf. There is a private wharf, 120m long, with a depth of 5.5m alongside its head. It can accommodate vessels up to 80m in length.

Punta Tucacas (10˚52'N., 68˚14'W.), low and wooded, is not prominent. Several low sandy cays lie close off this point are practically indistinguishable. A conspicuous, wooded mountain range extends about 5 miles W along the N side of the peninsula forming the point. The ridge decreases gradually in height to the E and terminates rather abruptly at its E end. This ridge provides a fair landmark for offshore navigation, particularly from the N or S.

Small vessels can take sheltered anchorage, in depths of 16 to 20m, close SW of Cayo Sombrero, which lies close E of Punta Tucacas. This anchorage should be approached from the S.

Caution.—Vessels passing Punta Tucacas are advised to keep outside of the 40m curve, because of the numerous shoal heads, with depth of 7.3 to 9.1m, which lie up to 3 miles SE, 2 miles E, and 2.5 miles NE of Cayo Sombrero. Vessels should not change course to the W until Cayo Borracho (10˚58'N., 68˚15'W.) bears 270˚, distant 5 miles, because of the 10.4m shoal lying about 2.8 miles NNE of this latter cay.

2.65 Punta Chichiriviche (Punta Varadero) (10˚55'N., 68˚16'W.), a low and mangrove-covered peninsula, is surrounded by drying flats. It is connected to Punta Tucacas to the S by a narrow neck of land. Banco Lavendera, a 2.7m shoal patch, lies about 1 mile E of the point.

Cayo Borracho stands 3.3 miles N of Punta Chichiriviche and is considerably higher than the other cays in the area. The cays are more easily distinguished than the mainland.

Puerto Chichiriviche (10˚55'N., 68˚16'W.) (World Port Index No. 12100) must be approached between dangerous shoals and reef-fringed cays, some of which are buoyed. The channel should not be attempted at night. It is dredged to a depth of 9.8m.

Tides—Currents.—Heavy swells at the entrance raise rough seas within the harbor.

Depths—Limitations.—A 120m long wharf, with a depth of 7.3m alongside its head, fronts Puerto Chichiriviche. It can accommodate vessels up to 80m in length. The wharf is approached through a channel, marked by lighted buoys, that is dredged to a depth of 9.8m.

Aspect.—A prominent church spire and a house, with a black and white roof, stand in the village. An oil tank situated close SW of the pier and a windmill standing 0.4 mile SW of the church are also prominent landmarks.

Pilotage.—Pilots and clearance must be obtained at Puerto Cabello.

Anchorage.—Anchorage can be taken, in a depth of 9.1m, mud and sand, N of a line joining the pier and Punta Chichiriviche, and 0.2 mile off the W shore of the harbor. Cargo is worked from lighters at the anchorage.

Directions.—To obtain maximum depth, approach from the ENE. From a position about 5 miles off the entrance, steer with the tangent of the NW side of Punta Chichiriviche in line, bearing 245˚, with the oil tank behind the pier. When about 0.5 mile off Cayo Pelon, the church spire and the house with the black and white roof will come in line bearing 270˚. Alter course to this latter range and pass between Cayo Pelon and Cayo Peraza. This range may be kept open to the N about 2˚ to increase the distance off the ledge off Cayo Pelon. When Cayo Pelon is abeam to the S, alter course to 234˚ with the oil tank dead ahead and Cayo Peraza dead astern. This latter course will lead to the pier or the anchorage. Smart handling of the vessel is required when passing between the cays. With a following sea, the steering should be carefully watched and sufficient speed must be maintained to ensure proper control of the vessel.

Puerto Chichiriviche to Cabo San Roman

2.66 The coast between Puerto Chichiriviche and Punta San Juan, 16.5 miles NNW, is low and flat. Some fairly distinctive hills, up to 92m high, rise several miles inland. Cayo Borracho and adjacent shoals have been previously mentioned. The only other danger is La Piragua, a pinnacle on a reef, which is located about 1 mile SE of Punta San Juan.

Punta San Juan (11˚11'N., 68˚24'W.), with Cayo San Juan lying close NW of it, is low with no distinctive features. Obstruction lights were reported to be displayed at the head of Bahia San Juan, a small bay on the NW side of the point. Cayo del Noroeste, a small reef-fringed and scrub-covered cay, stands 3 miles NW of the NW extremity of the point.

The coast for about 4 miles NW of Punta San Juan is low and fronted by a sandy beach, but further NW the land becomes hilly with red clay bluffs.

2.67 **Punta Aguide** (11˚21'N., 68˚42'W.), a red clay bluff, is located 19.5 miles NW of Punta San Juan. It is 23m high but is prominent only from the E. A village and some palm trees stand on the point. Bajo Aguide and Bajo Uveros, each with a depth of 1.8m, lie about 4 miles NE and NW, respectively, of the point. Vessels should not proceed into depths of less than 40m when passing this point.

The coast between Punta Aguide and Punta Zamuro, 10 miles NW, is alternately bluff and low, and backed by rolling hills inland. Both points are marked by lights.

Caution.—An extensive area dangerous to navigation lies within an area extending 14 miles N from Cayo Noroeste, then 22.8 miles W, then 3 miles S to Punta Zamuro as best seen on the chart.

Punta Zamuro (11˚27'N., 68˚50'W.) is low and inconspicuous, but may be identified by a small village with scattered buildings on it.

Punta Sabana, about 17 miles WNW of Punta Zamuro, has a rounded knoll which appears prominent only from the E or W.

Punta Manzanillo (11˚32'N., 69˚16'W.) is a high bluff sloping to the W; it appears as the outer end of a ridge attaining higher elevations to the S.

Cerro de Ricoa, a 457m high prominent peak, stands about 7.5 miles SE of the point. This peak is the E summit of the coastal range which extends 20 miles to the W.

2.68 **Puerto Cumarebo** (11˚29'N., 69˚21'W.) (World Port Index No. 12090), situated 5.8 miles SW of Punta Manzanillo, consists of the roadstead fronting the town of Cumarebo and the oil terminal at Tucupido, about 2 miles NE of the town. The church steeple and light at Cumarebo, and the oil tanks and pier at Tucupido, are prominent.

Banco Cumarebo, a shoal extending 2.5 miles in extent with a least depth of 10.4m, lies 6 miles NNW of Cumarebo.

An oil pier, 1,200m long, extends NNW from the shore at Tucupido and has a depth of 6.7m alongside its outer end. A platform, at the outer end, has a dolphin on either side of it.

Pilotage.—Pilotage is compulsory. The pilot boards 1 mile off the pier head.

Anchorage.—Anchorage can be taken, in a depth of 11m, about 1.3 miles N of the town.

The coast between Puerto Cumarebo and Punta Taimataima, 9.5 miles W, consists of sandy beaches backed by irregular sandstone bluffs and sand dunes.

Punta Taimataima (11˚30'N., 69˚31'W.), a high rounded bluff, is easily identified as the coast turns abruptly SW from it to form Bahia Vela de Coro. A light is shown from Punta Taimataima. The structure is difficult to identify from the offing against the background of trees.

2.69 **Le Vela** (11˚28'N., 69˚35'W.) (World Port Index No. 12080) stands in the SE corner of Bahia Vela de Coro. It is the port for the town of Coro. There is a pier situated 1.8 miles NE of La Vela, with ro-ro facilities and a depth of 6.1m alongside. The customhouse, a conspicuous white building with a red roof with "Aduana" painted in white on its top, stands in La Vela.

Pilotage.—Pilotage is compulsory. Vessels bound for this port should await the pilot either at anchor or underway 2 miles N of the lighted buoy moored about 1 mile NW of the lighthouse on Punta Taimataima.

Anchorage.—Anchorage can be taken, according to draft, in the roadstead off the town in the vicinity of the lighted buoy moored about 1 mile NW of the town. This anchorage may be approached by sounding as it is clear of dangers. With only a moderate breeze, a considerable sea is experienced in this bay. Punta Taimataima provides little shelter and breakers are nearly always present at the head of the bay.

The coast between La Vela and a point on the shore 19 miles NW forms the E side of Istmo de Medanos.

This isthmus is 2 to 3 miles wide and connects Peninsula de Paraguana to the mainland. It consists of low sandhills marked by swampy land and lagoons.

The E side of Peninsula de Paraguana extends about 33 miles NNW from the NE side of Istmo de Midanos to Cabo San Roman. This section of coast is generally low and sandy, but with few distinguishing marks. Cerro Santa Ana rises to an elevation of 853m, about 11 miles SW of Punta Adicora, and is visible for about 60 miles on a clear day. However, it is frequently covered by clouds. During the winter, haze usually prevents this conspicuous peak from being visible from over a distance of 30 miles. A conspicuous group of buildings have been reported to stand 9 miles N of Cerro Santa Ana.

Caution.—An abnormal magnetic disturbance has been observed between Puerto Cumarebo and La Vela.

2.70 **Punta Adicora** (11˚56'N., 69˚48'W.), with the village of Adicora standing on it, is low and fringed by a reef. Reefs, some awash, lie within the 10m curve in this area and up to 2 miles offshore between this point and Punta Bravo, 3.8 miles NNW. A light is shown from Punta Adicora.

The coast between Punta Adicora and Cabo San Roman, 19 miles NNW, is generally low and backed by a plateau, about 30m high.

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Punta Brava (12˚00'N., 69˚50'W.), though low and inconspicuous, is marked by a distinctive clump of mangroves. A prominent white house stands 3.5 miles WSW of the point.

Punta Tomatey (Punta Tumatey) (12˚10'N., 69˚56'W.), located 11.8 miles NNW of Punta Brava, is low, sandy, and covered with sparse scrub.